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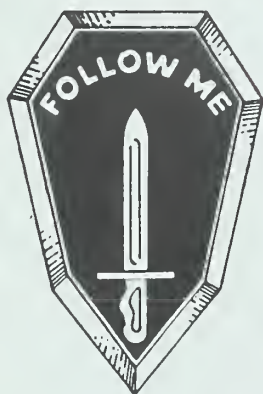
Secretary of the Army

MG CARMEN J. CAVEZZA

Commandant, The Infantry School

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Commandant's NOTE

MAJOR GENERAL CARMEN J. CAVEZZA Chief of Infantry

THE RANGER COURSE

Every Infantryman who has experienced combat knows the value of tough, realistic training. And because our current tactics emphasize independent actions by small units, there is a greater need for soldiers who have been trained under demanding conditions and who are accustomed to producing exemplary results in the most rigorous of combat environments. As a result, there has been a great demand for Ranger-trained soldiers in all types of infantry units.

For almost 40 years, the Infantry School has conducted Ranger training. Throughout those years — even as the course's program of instruction has changed to accommodate new weapons, equipment, and doctrine — the Ranger training mission has not changed. That mission is to produce a hardened, competent, small unit leader who is absolutely confident that he can lead his unit into combat and overcome all obstacles to accomplish its mission.

The School continually reviews and analyzes the training offered by its Ranger Training Brigade. Next month, as a result of our most recent look at the training program, we will make a number of adjustments to the course. These adjustments will not affect the length of the course. They are designed to modernize the program of instruction and to enhance the students' opportunity to successfully complete the course.

Here is a brief rundown of the adjustments:

During the first, or Benning, phase, the course will begin on Monday instead of Friday to ease certain administrative constraints, and the previous zero-day testing program will be expanded to a four-day assessment period — the Ranger Assessment Phase (RAP) — so the Brigade can better determine an individual's readiness to complete the program successfully.

The RAP will include the Army's Physical Fitness Test, the Combat Water Survival Test, a five-mile run that must be completed in 40 minutes, day and night land navigation testing, an eight-mile foot march, and the Ranger Stakes (an evaluation of ten Soldier's Manual tasks). Soldiers must successfully complete these events to continue the course.

The Benning phase will continue to focus on training Ranger candidates to an entry level of proficiency in conducting squad patrolling operations. At the same time,

there will be increased emphasis on land navigation and survival training.

The desert training phase, formerly the fourth phase of the course, will now be the second. The Brigade is moving this training from Dugway Proving Ground to Fort Bliss to reduce operating costs, increase training support, and avoid Utah's extreme winter weather conditions.

This phase of the training program — following an airborne insertion conducted with full combat equipment — will concentrate on desert survival and operational considerations and on transitioning the Ranger students from squad to platoon level combat operations. When they complete their desert training, the Ranger students will return by military aircraft to Fort Benning, where they will conduct another airborne insertion.

Following a short recovery period, the students will then be transported to Camp Frank Merrill in north Georgia to be trained in basic mountaineering skills and a continuation of platoon combat operations. With minor exceptions, this training will be much the same as that given to previous Ranger classes.

Finally, the Ranger students will move to Florida for the fourth and final phase of their training. Although they will still face waterborne training, a mid-cycle night jump, and difficult swamp infiltrations in their 13-day FTX, they will now also seize MOUT (military operations on urbanized terrain) objectives and conduct upgraded air assault training.

In addition to these changes in the program of instruction, the Ranger Training Brigade has also begun a significant effort to upgrade its training equipment, organization, and opposing force model to more closely resemble those of a modern U.S. light infantry unit operating in a low intensity environment.

The Ranger Course is the Army's premier leadership course. It challenges individuals who want to be the best soldiers and the best leaders they can be. Those who complete the course take great pride in their accomplishment. A Ranger leader stands as a proud symbol of the soldier who is prepared to meet the threat of tomorrow's unknown adversary.

INFANTRY LETTERS



FIRE SUPPORT

I am an instructor for the Fire Support Advanced Noncommissioned Officer Course at Fort Sill. After reading "Understanding Fire Support," by Captain Jonathan D. Thompson (INFANTRY, May-June 1991, pages 38-41), I have some comments.

On page 39 the article mentions a maneuver company commander *writing* an operations order (OPORD). Since when does a company commander *write* an OPORD? The armor company and the two infantry companies I have supported did not have their company commanders write OPORDs.

On page 40 the article mentions company commanders approving the establishment of coordinated fire lines (CFLs), restrictive fire lines (RFLs), and airspace coordination areas (ACAs). Field Manual 6-20-30, page F-2, clearly states that CFLs are normally established by a brigade or a division but, under certain circumstances, can be established by a battalion. The same manual, page F-5, states that an informal ACA is normally established by a task force or higher and a formal ACA is normally established by a separate brigade or higher.

A restrictive fire line is established by the commander common to both forces. Normally this will be battalion or higher. Under certain circumstances, a company commander may find himself the common commander.

This whole article leads one to believe a maneuver company has a field artillery battery supporting it. By field artillery doctrine, minimum adequate support is one field artillery battalion for one maneuver brigade. This allows the brigade commander to have one battery of artillery support one of his battalions, if he so chooses. Normally, a maneuver company will not have an

artillery battery supporting just it. The battery will actually be supporting the battalion as a whole.

The Field Artillery Officers Advanced Course teaches captains to function as battalion and brigade fire support officers. The Fire Support Advanced NCO Course teaches NCOs to work at battalion, brigade, division, and corps levels. The Fire Support Basic NCO Course teaches sergeants and staff sergeants to be company fire support NCOs. Since the company fire support officer is normally a second lieutenant with very little experience, it might be better for a company commander to have the fire support sergeant come along with the fire support officer whenever fire planning is being done. After all, this NCO has been doing the job longer than the new lieutenant.

Overall, this article may lead some maneuver company commanders to expect more than they will actually get, especially in the area of establishing fire support coordination measures.

STEVEN W. CONNORS

SFC, 13F

Fort Sill, Oklahoma

AUTHOR'S REBUTTAL

Reference the letter from SFC Stevan Connors in response to my article, first of all, Sergeant Connors questions whether company commanders write operations orders. He states that in the three maneuver companies he has worked with, the commanders never wrote OPORDs. Granted, they do not issue written OPORDs, but they do take the battalion or task force order, do their own estimates, then issue oral orders. I know of few commanders who can issue oral orders without writing them down first. I would bet that the

commanders he worked with not only wrote orders but wrote them in the familiar five-paragraph format. This format includes a Fires paragraph, whether the order is from the battalion or the company.

In regard to his comment about fire support coordination measures (FSCMs), perhaps I was unclear. He is correct in saying that company commanders rarely, if ever, establish CFLs or ACAs. But my intent was to explain what these are, because a company commander may find them on his graphics and must know their purpose. Furthermore, regardless of the level at which any FSCM is approved, it is the maneuver commander, not the FSO, who must approve it.

While a company commander may not approve CFLs or ACAs, he *can* establish an RFL if he requires it. One example could be a clearing operation in which two platoons are moving toward each other. The RFL is necessary in that situation to prevent fratricide. As a light infantry platoon leader, I did several similar missions.

Finally, nowhere in my article do I allude to a company having a firing battery in direct support. Every student in the Infantry Officer Advanced Course learns that one maneuver brigade has one artillery battalion in direct support. In that brigade, however, one maneuver battalion will have priority of fires and, more than likely, one company or team in that battalion will receive the same. Thus, a company commander could have an artillery battalion firing on one of his targets.

Sergeant Connors says, "Normally a maneuver company will not have a battery supporting just it. The battery will actually be supporting the battalion as a whole." Artillery fires are most effective when massed. Thus, an artillery battalion's three batteries firing one

round simultaneously at one target are more effective than one battery firing three rounds in a row, even though the overall number of rounds is the same. That is why a brigade receives an artillery battalion in direct support.

I do agree with Sergeant Connors that the company commander should include his fire support NCO in fire planning. His experience is invaluable. Still, the commander needs to hold the fire support officer responsible.

This type of dialogue between the two branches is exactly what the cross-over program between the Infantry School and the Field Artillery School is intended to do.

Furthermore, because my article is based on lessons I learned from the two schools, I am interested in hearing from veterans of the Persian Gulf War to find out how combined arms worked in that conflict. We can all learn much from each other.

JONATHAN D. THOMPSON
CPT, Infantry
Company D, 1st Battalion,
15th Infantry
APO New York 09702

NIGHT SIGHT BRACKET SOUNDED FAMILIAR

According to an item in the News section of *INFANTRY*'s May-June 1991 issue (pages 6-7), the Armament Research, Development, and Engineering Center at Picatinny Arsenal, New Jersey, had developed a night sight bracket that clamps onto the tube of the AT4 antiarmor rocket.

This design sounded all too familiar to me, because several years ago one of my former soldiers, Specialist Michael Samuelson, designed a night sight bracket that clamped around the AT4 tube, had it manufactured, and tested it (using the AT4 subcaliber device). This was done in 1989-90 under the direction of Lieutenant Colonel Larry White, commander of the 4th Battalion, 502d Infantry, Berlin Brigade at the time (now Colonel White, commander of the 11th Infantry at Fort Benning), who saw

the need for a night firing capability for the AT4.

Specialist Samuelson's design was a hinged bracket that clamped around the AT4 tube between the two front sight post housings. It had a hinged thumb screw for quick mounting and removing and had a mount that accepted the AN/PVS-4 night sight.

Specialist Samuelson was also responsible for modifying the weapons rack used in most arms rooms to store the M249 squad automatic weapon. Before his modification, the M249 could not be locked securely in the weapons rack.

If the AT4 night sight bracket being tested was based on his design, I believe he should receive credit for its invention. Many good ideas come from soldiers in the field, but all too often these soldiers don't get the recognition they deserve.

BRENT HOLMAN
SSG, Infantry
Fort Benjamin Harrison, Indiana

AUFTRAGSTAKTIK

Let me say how much I enjoyed the article "*Auftragstaktik*" by Lieutenant Colonel Knut Czelik of the German Army. It confirmed my belief that *Auftragstaktik* is the equivalent of our mission type order.

Obviously, the senior commander who uses mission type orders must consider the experience and ability of his subordinates. He must also be ready to accept responsibility for the mistakes of his subordinates. But if he has a budding Nathan Bedford Forrest or Erwin Rommel serving under him, he will usually be successful using mission type orders or *Auftragstaktik*.

H.T. HUNT, JR.
LaGrange, Georgia

LRS UNITS

The mission of long range surveillance (LRS) units is to conduct surveillance, reconnaissance, target acquisition, and

battle damage assessment. The teams of a division LRS detachment operate in the battle zone; the teams of a corps LRS company operate in the detection zone.

My specific interest is the organization, equipment, and methods of operation of the corps LRS companies. I believe that their MTOEs (modified tables of organization and equipment) prepare them only to conduct surveillance and that they have little ability to conduct reconnaissance, target acquisition, and battle damage assessment missions in the detection zone.

The following anecdote illustrates the ability of corps LRS companies to conduct surveillance in the detection zone. Note how corps LRS companies, as human intelligence (HUMINT) collection assets, complemented sensor intelligence collection systems in this case to satisfy the corps commander's priority intelligence requirements (PIRs).

During REFORGER 88, VII Corps' OV-ID aircraft detected a large number of moving target indicators moving southeast along the line of communication (LOC) in the detection zone. Side-looking airborne radar (SLAR) could not differentiate between wheeled and tracked vehicles. The VII Corps LRS teams operating in the detection zone reported that only light wheeled vehicles were moving along that LOC. They also reported that many M60s and M113s with 8th Infantry Division bumper markings were deploying south on another LOC on the western flank. The VII Corps LRS company revealed the V Corps deception operation and quickly determined where V Corps was committing its reserve.

Because corps LRS teams are made up of airborne infantrymen, their range of movement on the ground is restricted to the distance they can walk each night. Consequently, their ability to conduct reconnaissance missions in the enemy's rear area is minimal. Likewise, the duration of their missions is limited by their ability to carry rations, water, and batteries, in addition to NBC gear, night observation devices, and HF communications equipment. (As each liter of water weighs a kilogram, a summer

day's water in the desert adds considerable weight to their rucksacks!) If they cannot also carry thermal imaging devices, laser target designators, and secure FM communications equipment, their ability to conduct target acquisition/designation and battle damage assessment missions in support of MLRS/AH-64/A-10 deep strike missions in the detection zone is, consequently, also minimal.

Because the corps LRS teams' range of movement on the ground is so limited, they often require aviation support for infiltration and exfiltration to within a few kilometers of their objectives. The corps combat aviation brigade's ability to provide such support in a high air defense threat environment is minimal.

Although a solution to these two problems may not have been possible on a highly structured, high density European battlefield, an "elegant solution" might be feasible on the less structured, non-linear battlefields of joint-combined contingency operations. Corps LRS teams, if they were equipped with HMMWVs (high mobility, multipurpose wheeled vehicles), could carry enough equipment and supplies to conduct extended reconnaissance, target acquisition/designation, and battle damage assessment missions in the detection zone. Their HMMWVs could be sling-loaded below UH-60 or CH-47 aircraft for insertion to and extraction from remote sites on the periphery of the detection zone, avoiding concentrations of enemy air defense assets. Although this technique would require (temporary) extension of friendly air superiority across the FLOT (forward line of own troops), few nations can match our air power.

With the low level night flight capability, extended range, and lift capacity of UH-60 and CH-47 aircraft, air assault insertion of corps LRS teams offer advantages over airborne infiltration: Aircraft are not required to ascend into the enemy's radar envelope to attain jump altitude; the likelihood of personnel injury and equipment damage during infiltration is reduced; and problems regarding the disposition of parachutes

after landing are alleviated. Airborne qualification for the corps LRS companies therefore represents an unnecessary, complex, expensive training distractor.

During Operation DESERT STORM, VII Corps relied heavily upon national and theater-level sensor intelligence collection systems. As deployment of such systems is dependent upon their capacity to be diverted from other major competing priorities, we cannot afford to assume that such assets would always be available to support the corps commander during future contingency operations. Therefore, we should continue to develop our capacity to conduct surveillance, reconnaissance, target acquisition/designation, and battle damage assessment missions at the operational level.

During the first quarter of Fiscal Year 1992, Company F, 51st Infantry (ABN)(LRS) will be deactivated. It should be reorganized and reassigned to the 525th Military Intelligence Brigade (ABN)(CEWI), XVIII Airborne Corps, which is our most deployable (and most often deployed) corps for contingency operations.

DAVID A. PILS
MSG, USA
Company F, 51st Infantry
Germany

MARKSMANSHIP TASK-CONDITION-STANDARD

In much of our Army's history, our soldiers have been noted for their marksmanship. Their skills were usually tied directly to their personal backgrounds and the fact that many of them grew up hunting, with firearms in their hands from an early age. Almost every well known story of great shooting in combat has behind it someone who was shooting well before he entered the service (Alvin York, for example). These people knew what the task-condition-standard was, and for them, time on a rifle range was largely familiarization with a new weapon, not learning how

to use it and employ it against live targets.

Unfortunately, we have fewer and fewer of these people today, and it has become more important than ever to have efficient and realistic training programs to teach combat shooting (using task-condition-standard). Our current marksmanship programs, unfortunately, don't fill the bill. We need a program that will get our soldiers' minds off the range and into what they need when their shooting has to count.

One of the major problems with the current program/qualification course is that it is so broad that the soldiers can't focus on specific skills. The qualification course tries to hit almost everything a soldier would have to do — stand, kneel, lie, move, shoot at single or multiple targets and at various ranges. Although this may be a good summary of combat shooting skills, as a training program it does not let a soldier get good at any one skill. We therefore have generalists instead of good marksmen. The qualification course becomes something to survive, and the number of rounds spent doing this prevents any real training.

What should we be doing? The most important thing is to think about combat and in so doing limit the tasks to a manageable level and still provide a focus for training. In standard Army training language, this can be defined in terms of two task-condition-standard statements:

TASK 1: Engage a silhouette target at 250 meters.

CONDITION: In daytime, wearing LBE, protective mask (in its case), and helmet from the prone unsupported position.

STANDARD: Firing one round, hit the target within five seconds. (Qualification standard is seven hits out of ten iterations.)

TASK 2: Engage a silhouette target at 50 meters.

CONDITION: In daytime, wearing LBE, protective mask (in its case), helmet, and rucksack containing 40 pounds, standing, holding the rifle at the waist with a round chambered and on safe.

STANDARD: Firing one round, hit the target within two seconds. (Qual-

ification standard is seven hits out of ten iterations.)

The specifics of these tasks can be debated, but the idea is there. A soldier has to do two things well with his weapon — shoot at long distance (given a bit of time) and kill an enemy up close before he can shoot first. All other “skills” are modifications of these two basic needs. With marksmanship defined this way, it is easier to focus training and teach specific skills. Ammunition can also be applied to getting good at these skills, with enough left over for familiarization incorporating the many variables that can occur in combat. (These modifications might include wearing the protective mask, night firing, using different positions, engaging multiple targets, changing magazines, firing from the opposite side of the body from normal, immediate action drills, and shooting from vehicles.)

It goes without saying that a soldier, and especially one who carries a rifle as a principal requirement of his MOS, should be the best marksman the system can make him. To do this, though, a marksmanship program has to have defined goals. During current standard Army training, the only goal ever really heard is to pass the qualification course. That does not make for a good program, and it is the root cause of mediocre

training. We can do better for our soldiers, and we have the tools easily available for a truly effective and realistic program.

GREGORY T. BANNER
MAJ, Special Forces

MILITARY HISTORY WRITING CONTEST

The Army's 1991 Military History Writing Contest is open to students attending officer advanced courses and the Sergeants Major Academy during calendar year 1991.

Entries must be previously unpublished manuscripts of 2,000 to 3,000 words (approximately 7 to 10 pages, typed and double spaced). Each essay should develop a limited historical theme related to the Army. Documentation is required but footnotes and endnotes do not count as part of the length requirement.

Some suggested topic areas are:

- Analysis of World War II or Korean War battles and campaigns. (Note that this is the period of the 40th anniversary of the Korean War and the 50th anniversary of World War II.)

- The Black experience during the Civil War, the Spanish-American War, World War II, or the Korean war.

- A historical perspective on a leader, leaders, or leadership, training, logistics, desert operations, or chemical warfare.

- Fighting outnumbered and winning — the Ardennes or Korea, for example.

- Desert operations.

To enter, an author must send two copies of his manuscript, along with any accompanying graphics, illustrations, or photographs, to the Center of Military History, ATTN: DAMH-FI(Writing Contest), Bldg. 159, SEFC/WNY, Washington, DC 20374-5088. He must include his Social Security number, the title of the course he attended, the course number, and a current address. His entry must be postmarked by midnight 31 December 1991.

Papers will be judged by a panel of military historians, using the following criteria: usefulness to today's Army leaders, originality, historical accuracy, sources and documentation, style, and rhetoric. Contest winners should be announced by the end of April 1992. The prizes will range from \$500 to \$100, or as the judges direct.

For additional information, anyone who is interested may write to me at the above address or call me at DSN 335-2905/2955; commercial (202) 475-2905/2955.

BILLY A. ARTHUR



INFANTRY NEWS



CHIEF OF INFANTRY UPDATE

EDITOR'S NOTE: Infantrymen are encouraged to comment on the items that appear here and to suggest topics they would like to see covered in the future. Address suggestions to Commandant, U.S. Army Infantry School, ATTN: ATSH-TDI, Fort Benning, GA 31905-5593, or call DSN 835-2350/6951 or commercial (404) 545-2350/6951.

THE FUTURE INFANTRY fighting vehicle (FIFV) will be developed to replace the Bradley fighting vehicle and selected M113 carriers (squad carriers, commander's vehicle, and XO's vehicle) in infantry companies (14 FIFVs per company). In the infantry battalion and brigade, the FIFV will replace both the commander's and the XO's BFVs/M113s until the command group vehicle is fielded.

The FIFV design will incorporate the following: Heavy ballistic protection, two-man crew and nine-man dismount element, rapid fire gun, antitank guided missile, directed energy weapon, area suppression weapon, modular armor, compartmentalization, advanced track, advanced integrated propulsion, automatic cueing and target acquisition system, and embedded training. The first-unit-equipped date is scheduled for the third quarter of FY 2004.

The Infantry School POC is MAJ William Roughton, Mobility Branch, DCD, DSN 835-1618 or commercial (404) 545-1618.

THE ADVANCED RIFLE grenade munition (ARGM) is muzzle mounted, attached to the service rifle, and launched with standard ball and tracer

ammunition. Two types of rifle grenades are being tested. The first is a bullet trap grenade, with a steel trap inside that prevents the bullet from reaching the fuse and warhead. The grenade is subsequently propelled down range by energy transferred from the bullet and propellant gasses generated by the fired rifle cartridge. The second type is the shoot-through grenade, in which the bullet travels through and out the top of the grenade.

State-of-the-art ARGMs are expected to significantly increase the supporting fires of each infantry squad and augment M203, MK 19, and 60mm mortar fires. The ARGM will give point men immediate suppressive firepower. The system is excellent for use in high-rise, house-to-house military operations on urban terrain.

Technical and user testing is scheduled for the fourth quarter of FY 1991 and the first quarter of FY 1992. Type classification will follow at the end of the second quarter of FY 1992, with first-unit-equipped date scheduled for the fourth quarter of FY 1996.

THE INFANTRY ANTIARMOR Master Plan (IAAMP) addresses solutions to the Infantry's antiarmor requirements. Those requirements are based on the ability to fight in low, mid, and high intensity environments on a sophisticated battlefield against a variety of forces.

Using the family of complementary antiarmor weapon systems concept — light-medium-heavy (LAW-MAW-HAW) — the IAAMP establishes requirements based on the analysis of threat armor, warfighting concepts and doctrine, current antiarmor programs,

training and leader development, and organizational/force structure effects. Infantry forces will employ antiarmor weapons on a nonlinear battlefield with an objective of shaping the battlefield (engaging the enemy at the time and place of choice).

The new antiarmor weapon systems being developed will provide increased effectiveness against the armor threat, better gunner survivability, greater engagement range, and a faster rate of engagement.

THE PUBLICATIONS DIVISION of the Directorate of Training and Doctrine has provided the following update on the status of publications:

TC 21-24, Rappelling. This circular is scheduled to be in the field by the beginning of October 1991. It contains an explanation of the basic rappelling techniques that soldiers and leaders can use in conducting rappelling operations. It serves as the primary reference at the Infantry School for both resident and nonresident instruction presented to cadets, officer candidates, and both commissioned and noncommissioned officers. This circular also discusses several advanced techniques that deal with infiltration and exfiltration.

FM 21-150, Combatives. The coordinating draft of this manual was distributed to the field recently. It contains information and guidance on rifle-bayonet fighting and hand-to-hand combat. It serves as a guide for instructors, trainers, and soldiers.

MOST KEY WARFIGHTING manuals used by infantry units (airborne, air assault, light, Ranger, and H-series

infantry) are now being revised by the Doctrine Division, Combined Arms and Tactics Directorate.

Field Manuals 7-8, The Infantry Rifle Platoon and Squad, and FM 7-20, The Infantry Battalion, are in the final publication process and should be available for pinpoint distribution by the third quarter of FY 1992. Both manuals contain tactical standing operating procedures (TSOPs) to be used by units in the field. Additionally, FM 7-8 contains revised infantry platoon and squad battle drills that supersede those found in ARTEP 7-8-Drill, January 1990.

Other manuals being revised include the following:

FM 7-7J, The Mechanized Infantry Platoon and Squad (Bradley), is expected to be ready for issue to the field in the fourth quarter of FY 1992. This manual will also include TSOPs and battle drills for Bradley-equipped units, and the Bradley 2 x 2 organization will be incorporated.

FM 7-30, The Infantry Brigade (Airborne, Air Assault, Light, Ranger, and H-series Infantry), will also be completed by the fourth quarter of FY 1992.

FM 7-90, Tactical Employment of Mortars, has been approved and will be in initial distribution by the second quarter of FY 1992.

FM 7-91, Tactical Employment of Antiarmor Platoons, Companies, and Battalions, has been sent to the field for review as a coordinating draft.

Comments or questions should be directed to Commandant, U.S. Army Infantry School, ATTN: ATSH-ATD, Fort Benning, GA 31905; DSN 835-7162/7114 or (404) 545-7162/7114.

THE USE OF SMOKE for training is the subject of a safety message from the U.S. Army Safety Center (USASC) at Fort Rucker.

As a result of fatal accidents and other injuries requiring hospitalization that have occurred when HC smoke was being used for training, USASC strongly recommends immediate adherence to

the safety standards in DA Pamphlet 385-63 (Draft), Range Safety Standards, pending its final publication.

This pamphlet, currently being developed, will include portions of Army Regulation 385-63, Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat, 15 Nov 83, now being revised.

The following is quoted from DA Pamphlet 385-63 (Draft):

Personnel will carry the protective mask when participating in exercises which include the use of smoke. Personnel will mask before:

A. Exposure to any concentration of smoke produced by M8 white smoke grenades or smoke pots (HC smoke) or metallic powder obscurants.

B. When operating in or passing through dense (visibility less than 50 meters) smoke concentrations such as smoke blankets and smoke curtains.

C. When operating in or passing through a smoke haze (visibility greater than 50 meters) and the duration of exposure will exceed 4 hours.

D. Any time exposure to smoke produces breathing difficulty, eye irritation or discomfort. Such effects in one individual will serve as a signal for all similarly exposed personnel to mask.

E. Personnel will mask when using smoke during military operations in urban terrain (MOUT) training when operating in enclosed spaces. NOTE: The protective mask is not effective in oxygen-deficient atmospheres. Care must be taken not to enter confined spaces where oxygen may have been displaced.

POCs at USASC (CSSC-SPI), are MAJ Tannen at DSN 558-2450 and CW3 Wohlenhaus or MSG Williams at 558-3530.

THE COMPLETE PHYSICAL fitness uniform (PFU) ensemble must be in the hands of all active duty personnel by 1 April 1992. The previously scheduled date was 1 October 1991. The date was extended to enable the supply system to support requirements of the Total Army and also to allow enough time

for soldiers who deployed to Southwest Asia to obtain the required items.

Currently, each soldier must have one PFU T-shirt and one pair of PFU shorts. By 1 April 1992, each must have a second T-shirt, a second pair of shorts, one sweat shirt, and one pair of sweat pants. By that time, sufficient quantities will be available in Army Military Clothing Sales Stores.

The Physical Fitness Badge is the only insignia authorized for wear on the PFU. When worn, the badge should be placed on the upper left front side of the PFU T-shirt or sweat shirt.

PROSPECTIVE STUDENTS can no longer expect to walk into a Department of the Army school at Fort Benning if they have not already been enrolled through their units. Current statistics from the Bradley Fighting Vehicle (BFV) Commander's Course, the Master Gunners Course, and the Infantry Mortar Platoon Course (IMPC) show that between 20 and 40 extra personnel report to each class only to be turned away.

The following are the current number of slots for each course:

BFV Commanders	40
Master Gunners	30
IMPC	72

The Infantry School's POC is Mr. Rehberg at DSN 784-6521.

THE 1991 DOUGHBOY Award was presented to General Richard E. Cavazos at the Infantry Ball, which was held at Fort Benning on 26 July 1991. Just prior to his retirement in 1984, General Cavazos was the commanding general of U.S. Army Forces Command (FORSCOM). Today, he is considered one of the nation's foremost experts in military affairs.

The Doughboy Award goes to individuals who have made substantial contributions to the Infantry. Previous recipients include Bill Mauldin, General Matthew B. Ridgway, U.S. Senator John Tower, and former Secretary of the Army John O. Marsh, Jr.

THE NATIONAL INFANTRY Museum has received many artifacts relating to the Persian Gulf War and has prepared an exhibit of some of them, both inside the museum and outside on the grounds.

Returning troops have been generous in sharing items they used or captured and were allowed to bring back. Too, enemy weapons such as rifles, pistols, mortars, antiaircraft guns, and rocket launchers have been transferred from the 24th Infantry Division at Fort Stewart, Georgia, as well as a T-72 main battle tank, a BMP-1 infantry combat vehicle, and a BRDM-2 reconnaissance vehicle. The museum also received an Iraqi motorcycle.

This exhibit has been popular with visitors, many of whom have come to Fort Benning to see their soldiers on their return from the war. In addition to the large number of Active Army soldiers sent from Fort Benning, numerous Reserve and National Guard units departed from and returned to the post.

A desert battle dress uniform (BDU) with hat and boots that was worn by (and donated by) Specialist Joey Cardwell of Company D, 2d Battalion, 18th Infantry, is on display. The unit was in the forefront of the attack into Iraq.

Another display shows a desert scene with U.S. soldiers in a bunker with sandbags around it, busily stacking ammunition cases and getting in water and supplies in preparation for the battle that may come. The soldiers are wearing the different uniforms used — a regular BDU, a desert camouflage BDU, and a night camouflage uniform that was worn over the daytime BDU. Also shown are various accessories and equipment such as sunshades; goggles; a scarf that wraps tightly around the neck several times to protect the wearer from sun, sand, and insects; rubber gloves; gas mask; and various footwear.

Other items on display are the field jacket of an Iraqi first lieutenant in the Republican Guard, an Iraqi gas mask, Soviet communications equipment used by the Iraqis, and weapons of the type used by both the Iraqis and the soldiers

of the coalition forces.

Donations of items related to previous war periods also continue. Recently received were a World War I machinegun cart, a Japanese rifle and sword, a German pistol, a Mosin-Nagant rifle with bayonet captured by the donor near the Nakdong River in Korea in September 1950, and a World War I Berthier model 1916 rifle. A large number of artifacts relating to the career of Brigadier General Claudius M. Easley, including uniforms, accessories, saber, insignia, and decorations, were given by his family. Many interesting World War II items that had been collected by Brigadier General Harry A. Sappington, as well as many items relating to his career, were given by his family.

The well-known artist Don Stivers has been commissioned to do a painting depicting the World War II Battle of

Crucifix Hill. Prints will be made and offered for sale in the museum gift shop.

The gift shop also has a number of items related to Operation DESERT STORM: *The Desert Shield Fact Book*, T-shirts, posters, and coins are some of the items being offered for sale.

The National Infantry Museum Society, formed at Fort Benning a number of years ago to assist the museum with financial and volunteer support, is open to anyone who is interested in joining. The cost is \$2.00 for a one-year membership or \$10.00 for a lifetime membership.

Additional information about the museum and the society is available from the Director, National Infantry Museum, Fort Benning, GA 31905-5273; telephone DSN 835-2958 or commercial (404) 545-2958.



Soldiers of the 35th Infantry Regiment establish a base camp on the front line, Hill 44, Guadalcanal, 15 January 1943.

THE 25TH INFANTRY DIVISION, its soldiers, and veterans will celebrate the 50th anniversary of the division's activation at Schofield Barracks during the week of 1 October 1991.

When the Hawaiian Division, which had been created in 1921, was deactivated on 1 October 1941, two new infantry divisions, the 24th and 25th, were formed from its components.

The 25th Division earned its first World War II battle star on 7 December 1941 when Japanese planes attacked Pearl Harbor. The following year, on Guadalcanal, the 25th earned its

nickname — the Tropic Lightning Division — for the speed of its deployment to and courage its soldiers had shown during the fighting on the island. Later, during the Northern Solomons campaign, it adopted its shoulder patch: a bolt of lightning superimposed on a taro leaf to indicate the division's Hawaiian origin.

In less than four years, the division fought in four major campaigns, received six unit citations and Medals of Honor for six of its members, and had a wartime record of 165 consecutive days in combat.

During the Korean War, the 25th received credit for ten campaigns, earned two unit decorations, and its members were awarded 14 Medals of Honor. And in Vietnam, the division participated in 11 campaigns, received four unit citations, and its soldiers earned 21 Medals of Honor.

In addition to the 50th anniversary celebration, the 25th Infantry Division will hold its annual convention in Honolulu during the same week.

(This item was contributed by Major Robert E. Sorenson, Public Affairs Office, 25th Infantry Division.)

THE INFRARED LIGHT transmitter (NSN 6240-01-275-8080) and the infrared marker kit (NSN 9905-01266-7558) combine to provide a covert light source for night operations.

The infrared (IR) light is visible with night vision goggles, aviators night vision imaging systems (ANVIS), and other image intensification devices but invisible to the unaided human eye.

Each light transmitter is a rugged self-contained unit that produces IR energy (850 nanometers) through night vision goggles at a range of up to three miles (five kilometers). The IR transmitter attaches to a universally available nine-volt battery and can easily be turned off and on as needed. To preclude the need for retrieval, the IR light transmitter is designed to self-extinguish after four hours.

The transmitters are small, lightweight, and rugged. Attached to the rod assemblies in the kit, they can be securely positioned above ground in any soil condition, including hard ground and marshy areas. Sections from several rod assemblies can also be combined for mounting a transmitter up to a height of 7½ feet.

Each kit contains six IR light transmitters and five rod assemblies, along with a placard giving instructions for designating helicopter landing zones.

THE COLD WEATHER clothing fielded last year to selected Army units requires special care when the compo-

nents need repair. The extended cold weather clothing system (ECWCS) jacket and trousers are made of a synthetic laminated fabric that repels water but is porous enough to prevent moisture buildup from perspiration.

Soldiers can make temporary repairs to the fabric in the field by sewing a rip or tear or by turning a torn garment inside out and patching it with duct tape (also known as "100-mile-per-hour" tape). Permanent repairs are made at the direct support level by sewing and then heat-sealing the sewn area.

Additional information on repairing these items can be found in the Pamphlet *Use and Care of ECWCS*, prepared by the Natick Research, Development, and Engineering Center. This pamphlet can be found in unit supply rooms or can be ordered (Item Number ADA 18799) from the Defense Technical Information Center, National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

A ¾-inch videotape is also available from the Joint Visual Information Activity in Tobyhanna, Pennsylvania. It can be ordered through post audiovisual support offices using order number H705956 DA ECWCS (TVT 10-8). The direct support repair process is described in Chapter 20, General Repair Procedures for Clothing.

TWO TECHNICAL BULLETINS have recently been updated and are available:

- TB 43-0239, Maintenance in the Desert, has been updated with the latest lessons learned from Operations DESERT SHIELD/STORM.

- TB 43-0243, Ammo Operations in the Desert, provides information on the handling, safety, movement, and storage of ammunition in desert conditions.

Publications clerks can order these bulletins on DA Form 4569.

THE U.S. ARMY SPECIAL Forces Command (Airborne) has been created to realign command and control of Active Army and Reserve Special Forces units.

Previously, Active Army Special Forces units were assigned to the 1st Special Operations Command (Airborne), and Army Reserve Special Forces units were assigned to the U.S. Army Reserve Special Operations Command (Airborne). The realignment assigns all active duty Special Forces units to the new command and gives the command operational control over Reserve Special Forces units.

The 1st Special Operations Command has been eliminated by the reorganization.

The Reserve Special Operations Command has been reorganized as the U.S. Army Civil Affairs and Psychological Operations Command, responsible for both Active Army and Reserve civil affairs and psychological operations units. Reserve units will be assigned to the new command, which will have operational control over affiliated Active Army units. The realignment makes no changes to the current training relationship and alignment of Army National Guard Special Forces units.

The 75th Ranger Regiment and the 160th Special Operations Aviation Regiment (Airborne) will continue to report directly to the U.S. Army Special Operations Command.

THE 38TH INFANTRY DIVISION, the major component of Indiana's Army National Guard, commemorated the 50th anniversary of its mobilization for World War II at a ceremony held at Camp Shelby, Mississippi, on 22 June 1991. During the ceremony, the division dedicated a permanent memorial marker — six feet tall, more than four feet wide at the base, weighing a total of some 12,900 pounds. The monument depicts on its four sides the division's history, campaigns, and decorations.

Interested former and current members of the division may obtain membership in the newly formed 38th Division Association by writing or calling the association's office at 3912 W. Minnesota Street, P.O. Box 41326, Indianapolis, IN 46241-0326; telephone (317) 247-3442.



Low Intensity Conflict And the Changing Nature of Warfare

JAMES R. LOCHER, III
Assistant Secretary of Defense
(Special Operations and Low Intensity Conflict)

General of the Army Douglas MacArthur, in May 1962, delivered a speech at the United States Military Academy at West Point in which he spoke of the courage, chivalry, and self-sacrifice of soldiers, dictated by adherence to the cardinal principles of Duty, Honor, Country. This speech was the story of the American man-at-arms during this century — a century of two major world wars — and by extension, the story of the American soldier throughout the nation's history.

After almost 30 years, the eloquence of that address in word and thought is still an inspiration to all who have worn the uniforms of the U.S. military services, and it still has the power to stir patriotic emotion.

But what about the nature of warfare itself? Is it still governed by the same great moral code — the code of conduct and chivalry — about which General MacArthur spoke? And are we prepared to fight and win today's and tomorrow's battles?

Now that some of the dust from DESERT STORM has settled, you may cite our recent experience in Southwest Asia and answer those questions in the

affirmative. Although the high technology weapons were certainly more advanced than any that we had ever before deployed in battle, Operation DESERT STORM took the form of the modern conventional warfare that is well known to the U.S. military establishment. And we succeeded.

But it is important to recognize that four decades have passed since U.S. forces fought similar conventional battles on the Korean peninsula once the 38th parallel was breached — four decades since MacArthur's brilliant amphibious assault at Inchon harbor. What have the U.S. military services been doing in the intervening years, a period that President Dwight D. Eisenhower called "years neither of total war nor of total peace"?

In part, we were fighting the Cold War. Our principal focus, in both military strategy and defense resources, was on deterring a Soviet attack in Europe — or, if deterrence should fail, on being prepared to fight the Soviets in a global war. Here, too, we succeeded. The Warsaw Pact has been officially dissolved. Germany has been united, and Soviet troops are withdrawing from

eastern Europe on a grand scale. A credible nuclear deterrent, a substantial conventional presence, and a strong commitment to our Allies served to prevent the realization of the warfighting scenario for which we had planned.

While all eyes were fixed on the inter-German border, though, our actual warfighting was being done in a completely different environment — one that we term "low intensity conflict," or LIC. Enemy soldiers did not cross the Fulda Gap, but revolutions, insurgencies, hijackings, and narco-terrorism cratered the politico-military landscape.

In the period since World War II, the United States' military forces have been involved — directly and indirectly — in 48 major low intensity conflicts around the world, primarily in the Third World. And despite our overwhelming military superiority, we have not been able to deter or to effectively fight low intensity conflicts.

Lest some be misled as to where my argument and line of reasoning are going, let me put low intensity conflict into perspective.

First, I acknowledge that nuclear and conventional missions will continue to

dominate the activities of the Department of Defense, and rightly so. These capabilities ensure the survival of the nation and can deter, suppress, and even defeat the most dangerous and direct threats to U.S. interests.

By comparison, low intensity conflict might seem to be "small potatoes." Nevertheless, it merits priority attention for two fundamental reasons: First, even with a reduced Soviet threat, low intensity conflict *can* threaten vital U.S. interests. And second, LIC will increasingly be the form of warfare we will have to fight.

Our historical commitment to checking Soviet aggression in Europe was mirrored by our efforts to counter Soviet expansion in the Third World, and this commitment lay at the foundation of our involvement in many of those 48 low intensity conflicts. As a result, many believe that the new era of unprecedented cooperation between the superpowers and the reduced Soviet threat will lead to a parallel reduction in Third World crises requiring U.S. intervention. After all, the Sandinistas have been voted out of power in a democratic election in Nicaragua; a peace treaty has finally been signed in Angola after years of bloody civil war; and the newly democratic Warsaw Pact states have closed down the training camps that were once home to some of the most ruthless international terrorists.

UNCERTAINTY

But a reduced Soviet threat does not necessarily mean that fewer conflicts will affect U.S. interests. Peace is not breaking out all over. When President George Bush was asked, in the wake of the collapse of the Berlin Wall and all that it symbolized, "Where is the threat now?" he replied, "The enemy is instability, the enemy is uncertainty." And that is exactly what low intensity conflict is all about.

Numerous phenomena bring about instability around the world, including rising nationalism; the collapse of authoritarianism; burgeoning interna-

tional arms bazaars; increasing ethnic tensions; religious fundamentalism; environmental degradation and disease; economic stagnation; and overpopulation. Terrorists, drug traffickers, anti-American insurgents, and other aggressors will seek to capitalize on this instability.

Although it is true that low intensity conflicts do not threaten the very survival of our nation, they can adversely affect vital U.S. interests — at home and abroad. On the home front, drug trafficking has created social and economic dislocations in our cities, our towns, and our schools; and years of civil war in Central and South America have led to huge refugee problems. Internationally, terrorists have targeted U.S. citizens and businesses overseas; revolutionary forces have overthrown friendly governments and reduced U.S. influence, access to foreign markets, and transit rights; and major LIC events have undermined the will of the U.S. public to stay engaged abroad. In summary, LIC is important because it threatens U.S. interests — usually slowly and indirectly, but with cumulative consequences that can be quite serious.

Furthermore, a succession of unaddressed LIC challenges can suggest U.S. impotence, embolden adversaries, and destabilize the international order that is essential for our security and prosperity. In this regard, it is useful to ponder the question: When did Saddam Hussein's miscalculation concerning his invasion of Kuwait begin? Did it begin with weak U.S. support for the Shah of Iran during the 1979 revolution, with the seizure of the U.S. Embassy in Teheran, with the failure at DESERT ONE, with the bombing of the Marine barracks in Beirut, or with the United States' failure to gain the release of Americans held hostage in Lebanon?

Low intensity conflict also merits our attention because it is the form of conflict in which U.S. forces are most likely to be engaged in the future. In fact, I believe the trend toward low intensity conflict will accelerate in the aftermath of our Persian Gulf campaign. Conventional deterrence has been

significantly enhanced as a result of the military superiority, determination, and will that the United States demonstrated in Operation DESERT STORM. It is therefore unlikely that our vital and important interests will be challenged directly, at least in the near term.

INDIRECT THREAT

Rather, those who wish to challenge our resolve, and those who are determined to pursue interests that are counter to ours, will do so indirectly — by threatening American lives and property and undermining institutions and values that promote democracy and civil liberties. They now clearly understand that the only means available to them will be various forms of indirect aggression such as terrorism, insurgency, subversion, sabotage, proxy warfare, and drug trafficking. Adding fuel to the fire is the fact that these activities can also provide them with a low-cost, low-risk, and high-visibility geostrategic payoff.

You might reply, "Okay, I accept your argument that indirect aggression is the most likely threat to U.S. interests. But if we can defeat Saddam Hussein and the fourth largest Army in the world in 100 hours of ground combat, then we can certainly defeat the Sendero Luminoso in Peru, Pablo Escobar in Colombia, and the Hizballah in Lebanon."

But that just isn't the case. To make my point, I would like to return to the discussion of the changing nature of warfare and the resulting limitations on conventional military power.

Within this context, one of the most important features of low intensity conflict is the nature of the enemy — an enemy that does not adhere to the established rules of warfare of the past 300 years. In that regard, he does not observe the distinction between combatants and non-combatants. He targets both. Witness the loss of hundreds of innocent lives as Pan Am Flight 103 exploded in the skies over Scotland, the peasants brutally slaughtered by guerrillas in the countryside of Mozambique,

and the politicians and journalists murdered gang-land style by the Colombian drug cartels. These have all been the victims of low intensity conflict.

Not only does the enemy not distinguish between combatants and non-combatants as he wages war, but he himself is difficult to distinguish from the population at large. Terrorists, revolutionaries, and drug traffickers do not wear uniforms. Try to locate the deadly terrorist in a crowded airport lounge or the narcotics trafficker on the streets of Medellin. It is difficult to fight a war when you can't discriminate between the enemy and the rest of the population.

In addition, since the enemy is most often not a state, there is no government and official property that can be targeted. For these reasons, the traditional concept of deterrence — which is based upon the threat of responding with overwhelming military force — has extremely limited utility in a low intensity environment.

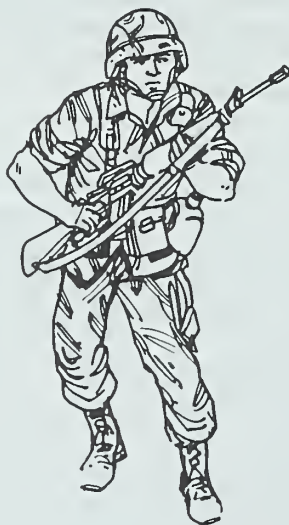
Furthermore, the enemy defies the rules of war most blatantly through his tactics. He employs terror and intimidation and engages in what, under the established rules of war, we would consider criminal activities. In sum, the enemy is not easy to identify; he doesn't play by our rules; and he cannot be targeted by our military strength.

Beyond the nature of the enemy, the LIC warfare environment is different from mid and high intensity conflict in several other respects. Most fundamental is the fact that low intensity conflict is a protracted struggle for political legitimacy. Traditional military objectives such as the capture of terrain are secondary, because political objectives — particularly gaining legitimacy by building popular support — dominate even at the operational and tactical levels. While the military services have the lead role in other levels of conflict, they have only a supporting role in low intensity conflict. In fact, conventional military operations can often be counterproductive in a low intensity warfare environment. To counter LIC threats, political, economic, and informational instruments of power must all be

brought to bear. The main point is that low intensity conflict is not just a lesser degree of conventional conflict.

President John F. Kennedy, in 1962, described the low intensity conflict challenge and what was required to confront that challenge. He said:

This is another type of war, new in its intensity, ancient in its origin — war by guerrillas, subversives, insurgents, assassins; war by ambush instead of by combat; by infiltration instead of aggression, seeking victory by eroding and exhausting the enemy instead of engaging him ... It requires in those situations where we must counter it, and these are the kinds of challenges that will be before us in the next decade if freedom is to be saved, a whole new



kind of strategy, a wholly different kind of force, and therefore a new and wholly different kind of military training.

Have we heeded that insightful message? Are we prepared for the challenges of low intensity conflict? Have we given enough attention to LIC doctrine, requirements, technology and equipment, and training?

My answer to these questions is a resounding "No." We are not comfortable fighting these conflicts; they don't fit into our military tradition. The Army-Air Force Joint LIC Project Final Report, issued in 1986, acknowledged our deficiency this way: "As a nation, we do not understand low intensity conflict; we respond without unity of effort; we execute our activities poorly;

and we lack the ability to sustain operations."

The U.S. military establishment has a number of important military missions, and low intensity conflict must be added to that list. The successes we have enjoyed elsewhere along the spectrum of conflict have given our adversaries tremendous incentive to avoid direct confrontation with us. Addressing the challenges posed by low intensity conflict, however, requires more than conventional approaches, conventional thinking, and conventional forces. The multi-dimensional nature of these threats requires an equally multi-dimensional, and usually unconventional, approach.

Having a policy for addressing low intensity conflict does not mean that U.S. forces will become engaged in every insurrection, terrorist act, or ethnic struggle around the world. The U.S. is not "the world's policeman." Nevertheless, the Department of Defense does have a key role to play in the area of low intensity conflict, in part because of the sheer vastness of its resources, and in part because it has assets that are particularly well suited for commitment in a low intensity conflict environment.

The nature of war has indeed changed. Nuclear and conventional war challenges will continue. But warfare for the vast majority of nations will be low intensity conflict. If U.S. interests are to be protected in this new warfare environment, U.S. military forces must be prepared for these unconventional threats.

Terrorism, civil wars, and remote insurgencies may not threaten U.S. interests with the same immediacy and clarity as the Iraqi invasion of Kuwait, but we will fail in our mission if we do not dedicate ourselves to meeting the challenges of low intensity conflict.

James R. Locher, III, has been Assistant Secretary of Defense for Special Operations and Low Intensity Conflict since October 1989. He is a 1968 graduate of the United States Military Academy. This article is an edited version of a speech he delivered at a meeting of the West Point Society of the District of Columbia in May 1991.

Echo Company

A Vital Player

EDITOR'S NOTE: This article was prepared by the Directorate of Combat Developments, U.S. Army Infantry School.

There continues to be a great deal of skepticism about the value of the Echo Companies in mechanized infantry battalions. Much of this skepticism stems from a dissatisfaction with the M901 Improved TOW Vehicle (ITV) in fast-paced operations. But some of it results from a belief that the Bradley fighting vehicle does away with the need for a dedicated antiarmor system and that Echo Company is merely a billpayer for fixes to heavy organization shortcomings.

The infantry community must come to an agreement on the benefits of having dedicated heavy antiarmor assets. Dissension will only result in our losing them. By examining what such assets have contributed in the past and what we believe they can do for us in the future, we hope to convince the community that Echo Company is a vital contributor and an integral part of the combined arms maneuver force.

As a historical example of antiarmor employment, in January 1943, Combat Command A, 1st Armored Division, was ordered to seize the crossroads of Sidi-bou-Zid, Tunisia. This brigade-sized task force attacked in column with a tank battalion leading. Defending the crossroads was an understrength *Kampfgruppe* with three panzergrenadier companies and a panzer company in reserve. The attack failed. Fifty-one of 54 Sherman tanks and 16 halftracks were destroyed. They were not victims of tanks but of German antitank (AT) guns. The *Kampfgruppe* battalion

commander had retained control of these towed 50mm AT guns and had structured his defense around their fires. He had positioned them for flank and rear shots into a central engagement area, supported by infantry and artillery and a planned, but not executed, panzer counterattack.

The Germans called such antitank employment a *Pakfront*, a group of up to ten well-camouflaged AT guns under a single commander, who was responsible for concentrating their fires on a single target area. The idea was to draw the attacking armor into a web of enfilade fire that was held until the last moment.

KILL, SUPPRESS, AND FIX

The Germans employed their AT guns effectively in the attack as well as the defense, despite the fact that they were towed and had trouble keeping up with the maneuver units. They were usually moved forward to kill, suppress, and fix enemy armor so that the panzers, massed in depth, could deliver the decisive stroke.

The Russians later adopted the *Pakfront* concept and used it against the Germans at Kursk. By Russian accounts, 75 percent of the German tanks knocked out in that "great clash of armor" were destroyed by AT guns.

U.S. commanders, on the other hand, traditionally have piecemealed their available antiarmor weapons, parceling them out to rifle companies or smaller units.

In the mid-1970s, after exhaustive evaluation and analysis, the Division Restructuring Study (DRS) concluded that the use of dedicated antiarmor weapons would be best planned at

battalion level but best executed at company level because of increased command and control and proficiency in employment. Under this concept, dedicated antiarmor weapon assets, notably the Echo Companies, because of their separate company status, would be employed to complement the available tanks and to cover critical avenues of approach into a battalion sector. It was believed that battalion commanders would be better able to integrate a combined arms team than company commanders because they would have more experience in applying combat power, and would also have an experienced staff and the necessary resources to handle multiple actions not directly connected with having to direct fire at the enemy.

These DRS conclusions, which were much like the later doctrinal philosophy of the AirLand Battle operations of Field Manual 100-5, were reflected in the Division 86 Army reorganization.

AirLand Battle doctrine ushered in a renewal of maneuver warfare at every level of the Army. There is now no clear distinction between attacking and defending. At all levels commanders position their forces or reserves in depth, seeking, structuring, and waiting for an opening and an opportunity to strike a decisive blow.

At the lower tactical levels, successful maneuver normally requires enough combat power to fix or hold an opponent in a frontal orientation so that decisive killing fire can be delivered from a position of advantage in his flank or rear.

The combination of Echo Company and four maneuver companies, particularly when the latter are modernized with M2 Bradley infantry fighting

vehicles (IFV), provides commanders a depth and agility they have never had before. They can now routinely mass tanks in depth at both battalion and brigade levels, using them in their most favorable roles of counterattacking or exploiting a successful attack. Tanks need not be employed as a unit's principal antiarmor platforms.

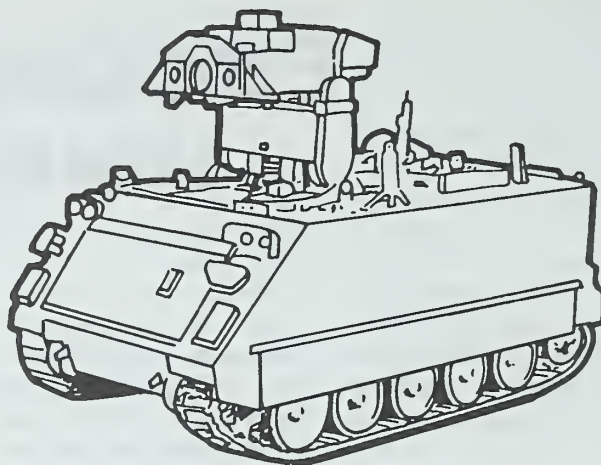
In the attack, Echo Company initially forms the base of a supporting attack-by-fire to fix the enemy force. For this role, the company will normally be reinforced with fire from the Bradleys' 25mm guns and, infrequently, from the tanks. Unfortunately, our commanders too often have placed their Echo Company in the rear of a formation where it must break off and then hurriedly move to its attack-by-fire position. This usually has resulted in a piecemeal attack.

In synchronizing Echo Company's attack-by-fire, the commander must consider using a separate axis and movement schedule, positioning it near the front of the battle formation as a vital part of the base of fire (the fixing force). Echo Company is also suited for contingency flank protection missions to block enemy counterattacks or to set them up for destruction by the maneuver companies.

In the defense (main battle area), the company is normally employed in either an area defense or a mobile defense. In the former, it is given a sector or battle position to defend, retaining critical ground, reinforcing the infantry fires, or denying avenues of approach to enemy armor or motorized forces. In a mobile defense, it can fix or contain enemy forces with antiarmor fires to set up the attack of friendly armor.

The battalion commander exercises command and control of the Echo Company through the company commander. Echo Company is the battalion commander's means of influencing the battle without using his infantry or tanks primarily in an antiarmor role — rarely should he piecemeal his antiarmor force by attaching out the platoons or sections of the company.

The essence of Echo Company is that it frees both the Bradleys and the M1



Abrams tanks from antiarmor missions and allows them to be employed to their best advantage. Commanders no longer have to task organize tanks with infantry as a standard procedure. The tanks can resume their rightful role, in mass, for shock effect and decisive action in both the attack and the defense. Bradley infantry is freed to provide depth to defensive positions and to channel the enemy into Echo Company attacks-by-fire.

The company further frees Bradley infantry for reconnaissance and security missions, restricted terrain clearance, night protection, obstacle and fortification breaching, suppression, and assault roles. The primary consideration for positioning Bradley infantry is for maneuver, not antiarmor, purposes.

The historical concepts and doctrinal roles and missions cited here are not anecdotal or scenario dependent. They are the fundamental underpinnings of maneuver warfare. If Bradley infantry is tied down with Echo Company or antiarmor missions, too many armor units may have to be diverted to assist them. Positional leverage, massed flank and rear attacks, and exploitation opportunities will then be lost, and we will be forced back into the linear, attrition warfare game.

This does not mean that the M901 is the right heavy antiarmor weapon system. Quite the contrary. The Infantry School is actively pursuing the fielding of an advanced system, the line-of-sight antitank (LOSAT). The LOSAT is a

dedicated, vehicular, long range, direct fire antitank system. It employs a kinetic energy missile to provide a significant overmatch capability against threat armor.

This system is programmed to replace the M901s in the antiarmor companies of mechanized infantry battalions on a one-for-one basis. Initially, in the first phase, the weapon module will be mounted on a chassis derived from the Bradley, but during the second phase it will be mounted on an armored system modernization (ASM) chassis. This system will reduce crew exposure time to a minimum, and the missile will have a greater range and lethality than that now employed with the M901.

At the present time, the LOSAT program is in an advanced technology test demonstration phase. The acquisition approach that is being used is uniquely tailored to speed up the equipping of units.

Employing the Echo Company correctly in its doctrinal role is important to success on both the training battlefield and the real battlefield today, and it will be important to success on all future battlefields where our ability to outmaneuver our opponents will be a guarantee of success. Echo Company's combat contribution is a vital component of mounted maneuver warfare.



Stopping Friendly Fire

CAPTAIN ROBERT A. ALBINO

Fratricide may be the most demoralizing tragedy a combat unit can experience. The overall reduction in combat effectiveness is even greater than if the enemy had caused the damage. In addition to the friendly soldiers who are hurt or killed, the soldiers who pulled the triggers can be so psychologically damaged that they are ineffective for both combat and noncombat tasks.

Various manuals tell us how to avoid friendly casualties. They tell us about the importance of coordination and of always knowing where our unit and nearby friendly units are. But they tell us little about how to stop friendly fire once it has started.

Here are ten suggestions for stopping friendly fire. (These suggestions do not apply to fire from friendly aircraft or long range artillery.) Although they are intended for squads and platoons, they can be tailored for use by larger units as well. In any case, if your unit begins receiving friendly fire, decide upon the most appropriate suggestion, or combination of suggestions, and use it quickly:

Yell. If within earshot of the soldiers who are firing at you, yell that you are U.S. soldiers and for them to stop firing. Using profanity may add emphasis to your message, but keep the message short and simple. Yell loud enough to be heard over the gunfire. Don't worry about compromising your position. It is probably already compromised.

Challenge Word or Password. Although the SOI (signal operation instructions) challenge word/password combination is intended for use in a static situation before firing starts, it can

also be used to stop fire from friendly units. Shout out the challenge word of the day's combination, and this should cause the challenged unit to cease fire as the soldiers realize they are firing on a friendly unit.

Running Password. A running password is an effective way to prevent or stop friendly fire if the situation does not allow waiting for a challenged unit or soldier to respond with the correct password. A running password should be an easily pronounced, multi-syllable word that is not related to the operation. Furthermore, it should not be profane or alcohol-related ("Budweiser"), because such words are overused and the enemy may also use them to trick you and infiltrate your lines.

Number Combination. A number combination is ideally suited to operations behind enemy lines. The leader picks a number below 20 (preferably an odd number) for the day or the mission. The challenging soldier says a challenge number and the challenged friendly soldier responds with a pass number that, along with the challenge number, will add up to the number of the day or mission. For example, if the number of the day is 13 and the challenge is 5, the pass is 8.

The number chosen for the day or mission should seldom be an even number, because a challenged enemy may respond with the correct pass number by merely mimicking what he hears. For example, if the number of the day is 12 and the challenge is 6, an enemy soldier may just repeat "6" and gain access to your unit.

Recognition Signal. One specific purpose of a recognition signal is to

prevent or stop a friendly fire situation. There are various kinds of visual recognition signals you can use — colored smoke, flares, star clusters, strobe lights, flashlights, VS-17 panels, flags, and mirror flashes. Use one immediately.

Although primarily a control measure, as in nighttime assembly areas, your unit's assigned color can also be an improvised recognition signal. At night, place a filter this color in a flashlight and flash the friendly unit that is firing on you.

Lift and Shift Fire. Although using the lift and shift signal does not convey the same meaning as "Don't shoot, we're friendly," it may be effective in directing the friendly fire away from you. If your signal for lift and shift fire is a flare or star cluster, then the signal's height may make it visible to a mortar or short range artillery crew that is mistakenly firing on you.

Surrender. As unorthodox as this may seem, surrender efforts can work. During the resulting lull in the firefight, those who fired upon you will realize that you are also friendly, and the situation will have resolved itself.

The international signals for surrender are throwing down weapons, raising hands above heads, and presenting a white flag. Doing the first two immediately is not a good idea since they involve exposing yourself to fire before your surrender attempt is fully recognized.

White flags are not standard Army issue for obvious morale reasons, so you will have to improvise one. You can do this with a stick (or a rifle, if need be) and anything white such as a T-shirt,

handkerchief, sheet of paper, the tissue paper from an MRE (meal, ready to eat), or the inside stuffing from a first-aid bandage.

Radio. Using the radio has the advantage of not exposing your exact location to those who are firing at you. First, try contacting the unit that is firing on you over your higher headquarters net. In addition to directly addressing the unit firing at you, this also informs the higher headquarters of your situation. If you are unsure which unit is shooting at you, then refer to it in relation to its location, or yours: "Friendly unit at (its location), this is (your call sign). You are firing at us. Stop shooting. Over." Or "All stations this net, this is (your call sign). Whoever is shooting at us at (your location), stop. Over." If possible, refer to the locations shown on the operational graphics. Giving grid coordinates over an unsecured net is a violation of communication security, and a grid location may be difficult to plot quickly.

If you are quite certain which friendly unit is firing at you but it is not responding to you on the higher headquarters net, then use the SOI to get that unit's internal net and try to raise it that way.

Several of these first eight measures must be designated before an operation begins. (To prevent their use by the

enemy if compromised, they are not permanent.) This information must be disseminated to all U.S. and allied units operating in your area of operations or adjacent to it, and at the same time you receive their anti-fratricide measures.

If for some reason your present operation does not have the predesignated communication measure that you need to use, try the one from the previous operation. For example, if the operation order of the present mission did not include a running password or recognition signal, use the word or signal from the last mission's operation order to stop friendly fire. It may work.

Withdraw. If all your attempts to end the friendly fire situation through communications or recognition signals are unsuccessful, then it may be necessary to withdraw. Understandably, this may prevent or delay you from accomplishing your mission, but this is something you and your higher commander will have to consider. Use smoke and CS grenades to prevent pursuit while you withdraw.

Cease Fire. Returning fire is probably the worst thing you can do. Thinking that the friendly soldiers firing on you will recognize the report of your weapons is ridiculous. And shooting back risks escalating a small firefight into an outright battle that won't stop until all of you are dead.

In essence, these ten suggestions are simple. If asked, most leaders with any experience can quickly respond with at least a few of the ten. What is important is that a leader think through these ten, plus any other possible ways of stopping friendly fire, and then quickly decide upon and implement what seems to be the fastest, most effective way.

The fear, excitement, uncertainty, smoke, and noise involved in "the fog of war" complicates this thought process. U.S. casualties from recent operations prove that U.S. leaders have not completely mastered ways of stopping fratricide.

As a final suggestion, if you are a leader about to conduct a mission in dense terrain, bad weather, limited visibility, or in any uncertain enemy situation or confused friendly situation, then review the ways of stopping friendly fire. If necessary, make a list on the butt of your rifle or anywhere else that you can refer to immediately in the event of friendly fire. Or better yet, memorize and practice the list. Your soldiers deserve every protection you can offer them.

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Property Accountability For the New Company Commander

CAPTAIN ROBERT E. MILANI

All too frequently, otherwise successful company commands are ruined by the most distasteful aspect of company command — property accountability.

Many "successful" commanders find out in their final days of command just how successful they have really been when they must put in a report of survey

worth thousands of dollars because of missing equipment and poor accountability procedures.

To avoid the same pitfalls, a com-

mander, from the very moment he assumes command, must be organized, knowledgeable, and thorough in his inspections and inventories of his company's equipment. He must follow the guidelines and procedures established by his senior commanders and property book officers (PBO) in regard to accountability.

There are many techniques that can help a commander account for his property. Some of the best include monthly 10-percent inventories, sensitive item inventories, and hand-receipt reconciliations.

The 10-Percent Inventory. Each company commander is usually required to conduct a monthly 10-percent inventory of his installation and organization property. The idea is for a commander to look at 120 percent of his property in a given year. A successful 10-percent inventory is always conducted by the commander, never delegated to someone else.

Sensitive Item Inventory. Company commanders are also usually required to conduct monthly inventories of all the sensitive items on the company property book. Each month, a PBO team provides an updated list of all the sensitive items on a commander's primary hand receipt and includes the serial numbers of those items. A commander can delegate this task to a commissioned officer in the company, and, in fact, it is usually rotated among the company's platoon leaders. The inventory verifies the serial numbers of such items as weapons, night sights, communication security equipment, and the like, and ensures that all sensitive items are either on hand or properly accounted for.

Hand Receipt Reconciliation. This technique, although not required, is an excellent way for a commander to verify that all of the equipment in his company is accounted for on sub-receipts. The most commonly used technique is to balance the sub-receipts against the working copy of the property book. This technique of ensuring that the hand receipts are up to date is particularly effective for conducting an inventory before a change of command.

Essentially, the reconciliation is done by posting the quantity issued for each line number on each sub-receipt to the working copy of the primary hand receipt. For instance, suppose the company has 15 sub-receipts and the commander is working with sub-receipt number 15. Let's say, too, the hand receipt holder for receipt 15 is signed for six widgets under line number W80808. The commander (or his representative) turns to that line number in the working copy of the property book and, next to "on-hand quantity," records "HR# 15 = 6." When all sub-receipts have been tallied, the hand receipt quantities should equal the on-hand quantities. Wherever they do not, those items are not being accounted for properly.

Inventories are successful only when all participants understand their roles in the monthly inventory and reconciliation process. To make sure they do, the following guidelines and responsibilities should be incorporated into any policy letter governing 10-percent inventories:

Company Commander:

- Develop a 10-percent inventory schedule with the executive officer (XO), the first sergeant, and the supply sergeant. Disseminate 10-percent inventory schedules in weekly training meetings.
- Conduct a monthly 10-percent inventory. Physically inspect each item of equipment, whether it is signed out or not. Hand receipt inventories do not count. All component annexes and shortage annexes will be updated and verified.

- Reconcile appropriate hand receipts and adjustment documents and ensure that all equipment on the 10-percent inventory is either on hand or accounted for by an adjustment document.

- Reconcile the previous month's hand receipt with the current month's hand receipt.

- Sign monthly sensitive item and 10-percent inventories.

Executive Officer:

- Coordinate the monthly 10-percent inventory schedule with the commodity area chiefs.

- Prepare a schedule for the 10-percent inventory, then clear it with the company commander and the first sergeant.

- Maintain a duty roster for platoon leaders to inventory sensitive items and to conduct a monthly hand receipt reconciliation for all organization and installation property. Do not have the same lieutenant conduct both the sensitive item inventory and the monthly hand receipt reconciliation.

- Make sure the platoon leaders conduct the sensitive item inventory and adhere to the inventory schedule.

- Conduct an inspection of all commodity area equipment before the company commander's inspection. Inform the company commander of findings.

First Sergeant:

- Coordinate the monthly 10-percent inventory with the platoon sergeants.

- Conduct an inspection of all platoon equipment before the company commander's inspection. Inform the company commander of findings.

Supply Sergeant:

- Pick up the monthly inventories from the S-4 and deliver copies to the company commander, the executive officer, and the first sergeant.

- Escort the company commander during his inventory. Have a copy of the primary hand receipt and the appropriate sub-receipts, component annexes, shortage annexes, and adjustment documents including statements of charges, cash collection vouchers, reports of survey, and turn-in documents.

- Take notes during each inventory and ensure that all adjustment documents and hand receipts are initiated or updated. Before the commander signs the monthly 10-percent inventory, make sure all hand receipts, component annexes, and shortage annexes are updated. Order all missing items, including Class IX items, and initiate any necessary adjustment documents. Reconcile all discrepancies the commander discovers during the 10-percent inventory.

- Ensure that the company commander inventories all new equipment

that has been put on the property book since the previous month and reconciles all adjustment documents with the new hand receipt and the previous month's hand receipt.

- Ensure that all sub-receipts are updated.

- Prepare a Memorandum for Record stating that the monthly sensitive item inventory, 10-percent inventory, and hand receipt reconciliation were conducted and by whom. List any deficiencies discovered and the corrective action taken.

Commodity Area Chiefs and Platoon Sergeants:

- Ensure that the published inventory schedule is adhered to.

- Lay out all equipment for the company commander's inspection. Hand receipts will not count for property; a physical inventory of the equipment must be done.

- Ensure that all hand receipts are on hand with the appropriate adjustment documents.

Platoon Leaders:

- Ensure that the sensitive item inventory and the hand receipt reconciliation are done according to the schedule the XO has provided. Complete inventories not later than the 21st of each month.

- Brief the company commander on findings.

When the entire chain of command

is involved in the inventory, everyone becomes interested in property accountability. This process also adds to the professional development of the junior leaders because it exposes them to the intricacies of the unit supply system. For the commander, it virtually eliminates accountability problems within the company.

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Search and Attack

CAPTAIN KEVIN J. DOUGHERTY

There are two techniques for conducting a movement to contact — the conventional technique of movement to contact and the search and attack. During the low intensity conflict (LIC) phase at the Joint Readiness Training Center (JRTC), the opposing force (OPFOR) is dispersed throughout the zone and, initially at least, his weaknesses are unknown. In this situation, the search and attack is the more appropriate technique.

While the search and attack technique is the doctrinally correct means of conducting operations at the JRTC, its decentralized nature places many unexpected demands on a commander and a unit. For example, a company commander cannot use the same approach to conduct a search and attack that he would use for the conventional technique. Because much home station training focuses on the conventional technique, though, many units are not

well-rehearsed on the search and attack technique, and this shows when they try it out at the JRTC. The repeated success of the OPFOR is further proof of this.

A company commander can anticipate many of the challenges of a search and attack operation by preparing a detailed and thorough operations order that addresses the considerations of METT-T (mission, enemy, terrain, troops, and time) for the particular operation.

Of great importance is the intelligence preparation of the battlefield (IPB) to help identify named areas of interest (NAIs) where some OPFOR action is expected. The NAIs must focus on the OPFOR, not merely on a recognizable piece of terrain that is of little value except as a navigational aid. And once NAIs are identified, they must be observed. This will help confirm or deny the IPB. Remarkably, many NAIs are merely identified and never placed under observation. A good way to avoid this

oversight is an NAI matrix that assigns the responsibility for each NAI to a specific unit.

A detailed terrain analysis is even more fundamental to a search and attack than it is to other operations, because the OPFOR is dispersed and must be found. The commander will not usually have the time or the resources to conduct a police-call sweep of his entire zone and will have to use terrain analysis to focus his search efforts. By determining the key terrain and the avenues of approach, he can direct his search at likely OPFOR locations instead of walking haphazardly through the woods hoping for a chance contact.

Because the terrain is so important, subordinate leaders cannot rely upon an analysis from their higher headquarters for their particular zones. Rather, they must refine any analysis they receive to make it appropriate by using the factors of OCOKA (observation and fields of

fire, cover and concealment, obstacles and movement, key terrain, and avenues of approach). Thus, if a squad leader's terrain analysis is exactly the same as his company commander's (as it often is), that squad leader has obviously not taken the time to study his zone thoroughly for himself.

The commander must not only identify OPFOR capabilities and courses of action, he must also wargame the actions he will take to counter or nullify the OPFOR's plan. For example, the fact that the OPFOR is operating in small dispersed elements requires that a search be detailed and systematic. Locating two-or-three-man teams is far different from trying to find a company assembly area.

Because an OPFOR commander will usually make contact only on his own terms, the friendly force should know that if the OPFOR does attack, the OPFOR commander believes he has the upper hand. This should give the friendly commander an idea of the size of the element he is facing, for if the OPFOR commander does not think he has the advantage, he will break contact before becoming decisively engaged. If that should come to pass, the friendly commander must then have a responsive consolidation effort to fix the OPFOR element before it can escape.

Knowing something about the OPFOR's ability or inability to mass, the friendly commander will also know how quickly he must react to maintain superior combat power. Too, if the OPFOR has the ability to use indirect fire and snipers, the friendly commander must rehearse the SOPs that apply and may initially designate the sniper-killer teams referenced in them. The OPFOR's use of booby traps necessitates dispersed movement and implies a clearing mission for the supporting engineers.

In most of the JRTC LIC scenarios, there is no armor threat, and this frees the Dragon gunners for other tasks. But even if the Dragon rounds themselves are not needed, the commander should consider using the Dragons' AN/TAS-5 night observation devices from static positions. Finally, the OPFOR's reliance on caches for resupply should help focus

the search effort. The location of a cache site goes a long way toward narrowing the OPFOR's main area of operations.

Obviously, a mere laundry list of OPFOR capabilities is of marginal value. Some friendly action must be taken to exploit OPFOR weaknesses and negate OPFOR strengths. Only in this way will the friendly force maintain the initiative, and this is the reason why a commander must wargame his actions.

ADJACENT UNITS

The most critical element to be covered in the estimate of the friendly situation may be the locations and actions of adjacent units. Since a search and attack is made up of multiple, coordinated patrols, each patrol must know where the others are. Obviously, this knowledge helps prevent fratricide as well as duplication of effort. Even more important, it lets each patrol know where it can get help during OPFOR contact: A patrol knows how long it must fix the OPFOR before help arrives, which way a withdrawing OPFOR can be pushed so that it will run into a waiting ambush, and who is in a position to move to block any OPFOR reinforcements. It is this knowledge of the friendly situation that separates a battalion search and attack from 27 independent squad-sized patrols.

As in the terrain analysis, a mission statement that is not refined at lower levels isn't going to do the job. The battalion may be conducting a search and attack, but the various squads and platoons should be given their own tasks to support this higher mission. Examples of these tasks are area and zone reconnaissance, ambush, surveillance, and security patrols.

Again, a squad leader's mission statement should not be the same as that of the commander. He should conduct his own search and attack by dividing his squad into multiple, coordinated patrols. The failure of junior leaders to recognize this distinction in their restated mission and the failure of higher commanders to assign their subordinates attainable, realistic,

and purposeful tasks often result in a disjointed, uncoordinated, individual effort.

The commander's intent and concept of the operation must address the usual three Fs — find, fix, and finish the OPFOR. Too often, though, the plan goes only as far as finding the OPFOR, which makes the operation a search, not a search and attack.

A unit's scheme of maneuver, which begins when it enters the operational zone, can be carried out in one of two ways. Either the company can move in unison to an objective rally point (ORP) within its zone and from there disperse into platoon and squad zones, or the squads and platoons can infiltrate directly into their assigned zones from outside the company zone. (The number and size of the patrols will depend on the size of the zone.) Numerous, smaller patrols, of course, are more appropriate to the decentralized nature of a search and attack operation and also help reduce the damage sometimes caused by the OPFOR's indirect fire.

As in all operations, the company commander should designate a main effort, but this is sometimes hard to do in such a fluid situation. If the IPB indicates that one patrol is more likely to make contact than the others, that patrol therefore is the obvious candidate for the main effort. Otherwise, it is a good idea to assign the main effort to a centrally located patrol.

Merely designating a patrol for the main effort is not enough. Something must be done to strengthen that patrol, and at the same time, to give other patrols supporting tasks. For example, the designated patrol might be given priority of mortar fires, more personnel, or such attachments as engineers or a fire support team.

One of the things that separates the search and attack technique from the conventional movement to contact technique is a degree of control. Because of the decentralized nature of the search and attack, the commander's physical control of the various patrols is next to impossible. Nonetheless, it is the commander who must maintain the big picture of what is going on in his zone,

and he must have a way of controlling the patrols, especially once contact is made.

The beginnings of this control are found in a clear statement of the commander's intent. If the patrol leaders know what the commander is trying to do, they can act accordingly, even if they cannot reach the commander for specific guidance.

A second way of achieving control is to use graphic control measures to facilitate movement, link-up, and consolidation. Unit boundaries are also fundamental to controlling movement. Since these must be recognizable on the ground, such linear features as ridges, creeks, and trails are ideal. When such features are used, however, the commander must be careful to assign specific responsibility for a feature instead of drawing the boundary down the middle and creating a sort of no-man's-land.

Another good control measure is the use of phase lines. By establishing a series of phase lines, the commander can orchestrate his patrols' rates of movement to ensure that they do not get out of supporting range of each other.

Once contact is made, the difficult process of consolidation begins, and preplanned link-up points selectively dispersed throughout the zone will make this process easier. These must be recognizable points, such as hilltops and road junctions. In the heat of an OPFOR contact in which the fixing patrol has a limited ability to do its job, adjacent patrols cannot waste time hunting for each other. The "keep it simple" principle is the best.

Once link-up is accomplished, the concentration plan must be more than "move to the sound of the guns." Unless certain control measures have been established, when a unit comes crashing into the front, it is difficult to tell friendly reinforcements from OPFOR counterattack forces.

One way to avoid this is to concentrate in two steps. The first step is to get the forces into the immediate area so they can influence the fight. This can be done by initially moving to a blocking position along an avenue of approach

either for withdrawal or reinforcement but still out of small arms range of the fight. From here the second step is to develop the situation, and this requires coordination. The fixing unit and the maneuver unit must learn each other's exact locations and this can usually be done by radio. If possible, a runner can be sent from the fixing unit to guide in the maneuver unit.

Once this has been accomplished, the two leaders must agree on a plan of attack. The plan can be as simple as, "I will hit their flank from the west. On my signal, shift fires to the east." In daylight, this signal will usually be smoke and, at night, a star cluster. Radio can supplement these visual signals. This type of coordination is not nearly as difficult in the conventional technique since the unit is already consolidated and its flanks are clearly established. When doing a search and attack, therefore, the commander must include added control measures in his operations order (OPORD) to compensate for the initial dispersal of his unit.

ACTIONS ON CONTACT

The crux of the execution paragraph is the "actions on contact" portion — simply stated, the commander must answer the question, "What happens when the OPFOR is found?" He must tell his men what size element should be fixed and what should be destroyed. His basic cutoff for this should be a 3:1 ratio of friendly to opposing forces, but surprise and shock can sometimes offset a deficiency in numbers. If this ratio can be attained by the finding element, the OPFOR should be destroyed. If not, the OPFOR should be fixed by the finding element and consolidation begun.

The final type of contact that should be planned for is the discovery of OPFOR cache points. Usually, units just destroy these and move on, but a better option may be to observe the sites and establish ambushes nearby. The OPFOR element, obviously, will return to the cache sooner or later, and it can then be destroyed or captured. The potential

intelligence value of a cache site and its ability to act as bait far outweigh the harm done to the OPFOR by hastily destroying a few supplies. At any rate, the cache can be destroyed any time.

The plan for fires must support the entire zone. Because the patrols are dispersed, concentrating direct firepower in some cases may be too slow. Indirect fires, particularly the company mortars, are responsive enough to fill this time gap until direct firepower can be concentrated. Planned targets will speed the call-for-fire process, but too many only muddy the waters. The target list must be updated as new intelligence is gathered — when a cache site is found, for example, or when a suspected OPFOR location that had been targeted proves to be vacant.

To provide responsive support, the mortar units must be completely aware of the scheme of maneuver, including any changes. They must also have a plan for their own security. Although frequent displacements will help, to be really secure, the mortars may need some augmentation. This augmentation can come from several sources. The mortars can co-locate with and work into the security plan of the command post or the designated reserve, or if there is no armor threat, the Dragon gunners can be attached to the mortars to help out with security.

Finally, as unpalatable as it may be to the commander, some situations may require that an infantry squad be assigned the task of securing the mortars. This is not to say that that squad cannot also patrol, but its patrol plan must include providing the mortars with security. Augmenting the mortars also has some service support benefits (to be discussed later) that may make this a less bitter pill for the commander to swallow. Nonetheless, the security of the mortars cannot be ignored.

When it comes to designating his reserve, a company commander has two choices: He can maintain it at either company or platoon level. The trade-off will be control responsiveness, so the commander will have to look at his METT-T analysis to see which is best. But again, the decentralized nature of

the search and attack will cast a strong vote for a responsive platoon-level reserve.

Finally, and because the LIC phase at the JRTC lasts four or five days, numerous patrol bases are occupied along the way. Unfortunately, planning patrol bases seem to be a lost art, and most are occupied by squads acting on their own. Patrol bases should be planned in advance. The sample annex format found in the Ranger Handbook is still the best guideline.

The biggest headache for units at the JRTC is probably casualty evacuation. Using the conventional technique of movement to contact, most units are used to having the trail unit take charge of casualties and allowing the lead units to keep contact with the OPFOR. Since the company is moving in one column, this process is centralized and easy to control. Usually, only one casualty collection point (CCP), one truck, or one landing zone (LZ) is needed.

The search and attack, however, does not lend itself to this neat method. The dispersal of the patrols, for example, requires that numerous CCPs be established. Getting transportation to all of them is quite a challenge to a light infantry company's limited vehicle capability.

The casualty evacuation plan must therefore be even more of a battalion-driven affair than usual. MILES cards require that "litter urgent" patients be treated in two hours, and "litter priority" patients in four hours. Other wounded personnel die of their wounds unless treated in 24 hours. These rules make units painfully aware of their slow casualty evacuation process. The problem usually is not evacuating a casualty to the company CCP but transporting the casualty from there to the battalion CCP.

The battalion can evacuate casualties by ground or by air. Evacuation by ground requires a secure main supply route (MSR), and a secure MSR results only from conscious effort. If likely MSRs are identified during the planning process, patrols can clear them. The initial security of these MSRs is an appropriate task for infantry squads

until they can be relieved by military police units. Too often, though, the search for MSRs is a haphazard one that clears and secures several bits and pieces of a route, but these cannot always be strung together to form an appropriate MSR.

Eventually, the battalion realizes it needs an MSR and then has to backtrack to secure one. It would be simpler to begin this process as soon as the battalion enters its zone, killing two birds with one stone. Although the search for the OPFOR may still be going on, it can be organized in such a way that a cleared MSR is a natural by-product of it.

CASUALTY EVACUATION

Casualty evacuation by air is the only alternative if an MSR has not been secured. This requires a secure LZ and adequate suppression of OPFOR air defense artillery (ADA). With the realistic time limits for treatment established by the MILES cards, air evacuation may be the only means responsive enough to save a soldier, and this responsiveness is dependent upon prior coordination.

Most units, unfortunately, have had it drilled into them that casualty evacuation cannot be allowed to halt the ground tactical plan. They desperately want to avoid halting an entire company while a helicopter is called in for one man, and the frequent result is that the soldier is never evacuated and is recorded as dying of his wounds. An alternative is to make a designated team responsible for securing casualties, giving first aid, and calling for air evacuation. Meanwhile, the rest of the platoon or company can continue with its mission. Units rarely use air evacuation at the JRTC, and it may be part of the answer to the current casualty evacuation problem.

In addition to casualty evacuation, service support must include taking care of the normal classes of supply. Many consumable items such as rations and ammunition need to be resupplied regularly. Link-up times and locations

for these supplies should be programmed in advance and made to support the patrol plan. Aerial resupplies can easily be adjusted to this schedule. Another option is to use a cache system like the one the OPFOR uses.

Special consideration must be given to the mortar platoon and its requirement to carry ammunition and equipment. Too often, the simple answer is for the platoon to carry only enough equipment to fire the mortars in the hand-held mode. While this eases the logistical burden, it severely hinders the mortar's ability to support the operation. (*See "The 60mm Mortar: How Good Is It?" by Captain John Spiszer, INFANTRY, May-June 1990, pages 19-21, and "81mm Mortars: The Forgotten Platoon," by Captain Christopher A. Collins, INFANTRY, May-June 1991, pages 33-36.*)

A commander can overcome this problem in several ways. The first is to have every soldier carry a couple of mortar rounds and cache them at ORPs throughout the zone. The mortar elements then rotate through these ORPs. The problem with this system is that it robs the scheme of maneuver of flexibility: To keep the resupply plan intact, the patrols must pass through the planned ORPs, even if they are no longer the most tactically desirable.

Another option is simply to augment the mortar platoon by co-locating it either with the CP or the reserve or by attaching unused Dragon gunners to it. In addition to easing the individual loads, this augmentation will help meet the security requirements previously discussed. If the mortars and the CP are co-located, the commander will certainly avoid the tendency to forget about his indirect fire asset. Again, the final decision will be based on his METT-T analysis.

In addition to locating with the mortars, a company commander has other options for his CP. One is to locate with the reserve, if the reserve is maintained at company level. This will help him maintain control over this unit and allow him to influence the action when the reserve is needed. The final option is to locate the CP with a patrol,

which will allow him to be closer to the action and to lead from the front. If this is done, the commander must resist the temptation to become the leader of that patrol at the expense of leading the rest of the company.

Wherever the commander chooses to place his CP, it must facilitate command and control of the entire zone. Part of this process is dependent on good communications, which again is made more difficult by the unit dispersal that is common to a search and attack. Since the commander will have little physical contact with his patrols, good radio communications are essential, especially when trying to direct a consolidation. Control of the high ground for communication purposes may become necessary, and this, like the MSR, should also be a by-product of the patrol

plan. If the high ground is not enough, the radio telephone operators must be prepared to use OE-254 and field expedient antennas, and it may be necessary to coordinate for a battalion retransmission.

Visual signals are also a requirement. The search and attack technique will include numerous link-ups, and recognition signals must be addressed, along with signals for shifting fire during attacks.

Light infantry units have found the search and attack technique the preferred method of conducting movements to contact, and this technique is certainly appropriate to the JRTC. Nonetheless, too many unit SOPs and commanders are still geared to the conventional technique.

A commander must realize that by

using the search and attack technique he is conducting a decentralized operation, and that his OPORD will be his last chance to give face-to-face guidance to his command. This guidance must consider the factors of METT-T that are peculiar to the specific operation; it is not just a conventional movement to contact OPORD into which the phrase "search and attack" has been inserted.

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SWAP SHOP



CROSS-ATTACHMENT COORDINATION

Executing a cross-attachment can be a painful exercise in a battalion or task force. Unless there is a normal association or a detailed standing operating procedure, the cross-attached company team or platoon is usually behind in planning and preparing for an operation when the operation begins.

The following checklist for coordinating a cross-attachment is for a platoon or a company team, and it is not meant to be exhaustive. It can be condensed to

a 3 x 5 card or inserted into ST 21-75-2, The Ranger Handbook, under Chapter 3, "Coordination Checklists."

Although some items are common sense and others are not always applicable, this checklist will ensure that some of the most basic but easily forgotten items are not omitted. It is especially helpful when leaders are experiencing sleep deprivation or when subordinate leaders must execute cross-attachments:

1. The cross-attached unit coordinates the following with his losing unit:
 - a. Time and place for a link-up with his next supported unit before the cross-attachment execution time.
 - b. Frequency and call sign of next supported unit.
2. The cross-attached unit coordinates the following with his gaining unit:
 - a. Recognition symbols — vehicle and personnel, both night and day.
 - b. Succession of command.
 - c. Target list — both artillery and engineer.
 - d. Battle drills.
 - e. Battle roster.
 - f. Class I, III, IV, V, and IX.
 - g. Location of combat trains, LRP, UMCP, and AXP.
 - h. Signal operating instructions (SOI).

- i. Quartering party procedures.
- j. POW handling procedures.
- k. Priority of work.
- l. Sensitive item list.
- m. Graphics.
- n. Quick reaction drills.
- o. Order of march.
- p. Assembly area procedures.
- q. Number and type of vehicles.
- r. Casualty evacuation plan.
- s. Peculiar signs and frequencies — for example, special AJ frequencies, star clusters for lifting and shifting fires.
- t. Stand-to procedures.
- u. Reports — specifically sensitive item reports.
- v. Recovery plan.
- w. Time and place of OPORD, reconnaissance, and rehearsal.

(Submitted by Captain Josef R. Hallatschek, Fort Irwin, California.)

Physical FITNESS



CAPTAIN PAUL M. VANDERBURGH



Physical fitness is an integral part of training in today's Army. We have focused a lot of attention on Army Physical Fitness Test (APFT) performance, as well as on weight control and military bearing. Although weight control and APFT performance are quite different from warfighting fitness, chances are that a soldier who performs well in both has a better chance of adapting to the physically demanding rigors of a future battlefield than a soldier who is overweight or scores poorly on the APFT, or both.

It is fairly well established that today's Army is aware of the emphasis placed on physical fitness and weight control. It may be just as important, however, to ask how much

our leaders actually know about the principles of fitness and weight control? If leaders are trainers, and if physical fitness is an integral dimension of training, then leaders should be knowledgeable of the basic concepts of physical fitness.

Master fitness trainers are available to help commanders

develop physical fitness training programs, but they are not dispersed down to battalion level in every Army unit. Furthermore, commanders who rely too heavily on their master fitness trainers are not taking it upon themselves to become technically proficient in the concepts of physical training. Since commanders must administer the Army's weight control program and must decide the fate of soldiers who cannot achieve its standards or those of the APFT, such a proficiency seems imperative.

At the United States Military Academy, all cadets are now enrolled in the Master Fitness Trainer Program. When they graduate and successfully complete the program, they will have the skill identifier that certifies them accordingly. As members of each successive class join the Army's ranks, fitness training proficiency will be more apparent at the leader level. (Since the 1990 class was the first to graduate as master fitness trainers, this process will take time.) Such certification would also be beneficial as a prerequisite for commissioning from the Reserve Officer Training Corps or Officer Candidate School programs.

In a research study conducted in 1988 at the University of Georgia, we administered a 20-question test (shown in the accompanying box) to 139 lieutenants in officer basic courses and 121 captains in officer advanced courses (from the Infantry, Signal, Military Police, and Chemical Schools), to evaluate their physical fitness knowledge. The overall average was 63.9 percent, with the captains scoring slightly higher (65.7 percent) than the lieutenants. Although this difference was statistically significant, there were no statistically significant differences in scores between branches.

Whether these results are surprising, and whether they are satisfactory, is questionable. Considering the amount of instruction the average captain or lieutenant receives on physical fitness concepts in his normal military schooling, these results may even seem commendable.

BEFORE READING FURTHER, TAKE THE TEST YOURSELF GIVE YOURSELF FIVE POINTS FOR EACH CORRECT ANSWER AND SEE IF YOU CAN BEST THE AVERAGES. ONLY THEN, AFTER YOU HAVE COMPLETED THE TEST, SHOULD YOU READ THE FOLLOWING.

Here are the answers to the test:

1.(a): Of the tests listed, the maximum bench press lift is the best index of muscular strength, because strength is defined as the maximum amount of force that can be generated in *one* repetition. In fact, tests that measure approximately five or fewer *repetition maximums* (the maximum number of repetitions that a person can perform of a particular exercise before muscle fatigue) are fairly good measures of muscular strength. The best answer, though, is a *one repetition maximum test*.

2.(d): Generally, the best exercise for improving push-up proficiency is *push-ups*. (The same is true for sit-ups, pull-ups, squats, bench presses.) This is the principle of specificity: Performance is improved the most if a person not only trains

the muscle groups involved but also trains them in the same way they will be tested.

There is evidence that performing what is normally a muscular endurance exercise in a *strength* mode (such as heavy bench pressing instead of push-ups) can improve performance in the muscular endurance mode. It is quite possible, then, the most desirable push-up conditioning program is one that incorporates both APFT push-ups and "heavy" push-ups — that is, bench presses. But this has not been substantiated in any research studies that we are aware of. Other exercises can help, especially if they affect other muscles that aid in the performance of the push-ups.

3.(b): Again, as in question 2, the principle of specificity applies. Even inclined sit-ups (as in answer a) or weighted sit-ups (as in answer c) are not as effective in improving sit-up performance as sit-ups themselves. But they can improve other dimensions of the abdominal muscles that are not measured by the sit-up test, and they can break the monotony of a routine of all sit-ups.

4.(a): Muscular endurance is defined as the ability of a muscle group to sustain repeated contractions, usually 20 or more, before tiring. Obviously the sit-up test best fits this category. One might wonder why the 100-yard dash does not. The answer is that the 100-yard dash primarily measures repeated contractions of leg muscles but is not limited by muscle fatigue; in fact, muscle fatigue is usually not attained in a 100-yard dash. Even in longer runs (200 to 400 meters, for example), the limiting factors rarely include muscle fatigue. These factors are more likely maximal sustained muscular power and anaerobic/aerobic capacity. A 20-foot rope climb test, if done properly, usually requires four or five repeated contractions, so it fits more into the category of muscular strength testing.

5.(c): This is another illustration of the principle of specificity, not only in the modality (running) but in the type of running. The two-mile run is a test of aerobic power and the principal limiting factors in performance are maximal oxygen consumption and aerobic threshold.

Maximal oxygen consumption is the maximum amount (expressed as a rate) of oxygen that can be extracted from the capillaries during maximal exercise. The aerobic threshold is the exercise intensity at which lactic acid, the primary fatigue mechanism, starts to accumulate in the blood stream. Although oxygen consumption and aerobic threshold are related, one does not necessarily predict the value of the other.

Maximal oxygen consumption is improved best by high intensity runs (those that are about 45 seconds per mile slower than a runner's best two-mile run average speed per mile), which tax the body's aerobic systems. The duration of these runs is probably 15 to 25 minutes; any longer and the high intensity needed probably cannot be sustained.

The aerobic threshold is best improved by very high intensity runs of shorter duration, called intervals. Intervals, such as repeats of one-fourth or one-half mile, done once or twice a week, will raise the lactic acid threshold. The

TEST YOUR KNOWLEDGE

1. Of the following, the one that best measures muscular *strength* is:
 - a. Maximum bench press lift.
 - b. Two-minute push-up test.
 - c. Pull-up test.
 - d. 100-yard dash.
2. Of the following, the best routine for increasing APFT push-up performance is:
 - a. A routine of pull-ups, dips, and arm curls, 3 days a week, 20 minutes a day.
 - b. Heavy weight training (6-10 repetitions before muscle fatigue) for all major upper body muscle groups, 3 days a week, 20 minutes a day.
 - c. Light weight training (25 or more repetitions before muscle fatigue) for all major muscle groups, 3 days a week, 20 minutes a day.
 - d. Performing push-ups until exhaustion twice a day.
3. Of the following, the best routine for improving APFT sit-up performance is:
 - a. 15 repetitions of steep (30 degrees) inclined sit-ups, once a day.
 - b. 100 APFT-standard sit-ups once a day.
 - c. 15 sit-ups with heavy barbell weights held to the chest, 3 sets a day, 4 days a week.
 - d. Nautilus (or other name brand) abdominal machine, 10 repetitions per set, 3 sets a day, 4 days a week.
4. Of the following, the one that best measures muscular *endurance* is:
 - a. APFT sit-up test.
 - b. Maximum bench press lift.
 - c. 100-yard dash.
 - d. 20-foot rope climb test.
5. Of the following, the best routine for improving two-mile run time on the APFT is:
 - a. Run 4-6 miles, 6 times a week, at a slow pace.
 - b. Run 7-8 miles, 3 times a week, at a slow pace; and run 3 miles 3 times a week at a medium pace.
 - c. Run 2-3 miles, 3 times a week, at a fast pace; and run 1/2 mile 5 times (2 minutes rest between runs), 2 days a week, at a very fast pace.
 - d. Run 3 miles, bicycle 10 miles, and swim 1 mile — each 2 days a week at a fast pace.
6. PVT Tentpeg is a reasonably fit individual who can do 50 push-ups on the APFT. He starts a program of 100 push-ups a day, 2 sets of 50 (at APFT speed), every day for 6 months. At the end of 6 months, the most likely changes that will have occurred in his body and level of conditioning are:
 - a. The muscles of his chest and arms will have significantly increased in size, and he will be able to lift twice as much weight with his arms and chest as he could before.
 - b. He will have lost a considerable amount of excess fat around his arms, chest, and shoulders, and will have significantly improved his 2-mile run time.
 - c. Not much will have changed in his physique or conditioning level, as he can already do 50 push-ups.
 - d. He will not have altered his physique much in terms of muscle size but will be able to perform considerably more APFT-standard push-ups.
7. SGT Gronk is overweight but still scores rather high on the APFT in all events. Select from the following the best program to reduce his weight, both in the short term and in the long term:
 - a. A moderate diet and slow to moderate 5-mile runs, 5 days a week.
 - b. A moderate diet and fast-paced 2-mile runs, 5 days a week.
 - c. A highly restrictive diet with significant cuts in his daily food intake but no physical conditioning as he is already in good APFT-standard condition.
 - d. A moderate diet and heavy weight training for all major muscle groups of the body, 3 or 4 days a week.

TRUE OR FALSE

8. ____The best way to remove excess fat from around the waist is to perform many abdominal exercises on a regular basis.
9. ____Regular weight training is more effective in reducing excess body fat than regularly done exercises like running, swimming, and bicycling.
10. ____The reduction in body weight in the early stages of a diet-only routine (without exercise) will be due mostly to lost body fat.
11. ____One will burn roughly the same number of calories running 5 miles in 30 minutes as running the same distance in 45 minutes.
12. ____The APFT two-mile test primarily measures the heart, lung, and leg capacity for endurance at a high intensity.
13. ____For people who do not like running, weight training done regularly with very little rest between exercises (so that the heart rate stays elevated) is just as effective in improving two-mile run time on the APFT as running regularly.
14. ____If one expends more energy (in calories) than one consumes in food (calories), he will lose weight.
15. ____The push-up is *primarily* an arm and chest exercise.
16. ____The sit-up will condition (or tone) the muscles of the lower back just as much as the muscles of the abdomen (in the stomach area).
17. ____The best way to increase muscle strength and size is with regular, heavy weight training (6-10 repetitions before muscle fatigue).
18. ____The primary causes of obesity are inactivity and overeating.
19. ____Body fat accumulation is much more substantial in inactive areas of the body.
20. ____In trying to improve performance on the APFT two-mile event, longer distance, slower pace training is preferable to shorter distance, faster pace training.



combination of these two techniques will be most beneficial in improving two-mile run times. We would not recommend that such a program be done throughout the year, but two months before an APFT would be ideal.

Based on all of this, formation runs at a shuffle pace are not appropriate (although they are better than nothing) for units that are specifically trying to improve their times on two-mile runs. A person must run at high intensity to get the best two-mile run performance.

6.(d): Push-ups are a muscular *endurance* exercise; one can usually perform many more than 20 repetitions before muscle fatigue sets in. The changes or adaptations that result from such a push-up exercise program can be grouped basically into one major change: an increased oxidative capability of that muscle group *without* a change in muscle size or loss of local body fat. This translates into that muscle group's increased ability to do many repetitions of a particular exercise. A muscular *strength* training regimen such as heavy weight training, in which few repetitions are done (6 to 10) before the onset of muscle fatigue, results in hypertrophy, or larger muscle fibers and greater strength. This does not necessarily mean more *endurance*.

It follows, then, that a heavy weight training program will not lead to the same improvement in push-up performance as push-ups themselves. A person who bench presses (high weight, low repetition) regularly, however, will probably still perform reasonably well on the push-up test, but primarily because of his increased *strength*. With training, each push-up repetition becomes a smaller percentage of maximum strength, so the point of muscle fatigue is delayed.

There is a possibility that a combination of push-ups and heavy weight training (particularly the bench press) may prove to be the best regimen to use in preparing for the push-up portion of the APFT, but there are no studies to substantiate this. The best fitness program, nonetheless, is

one that develops not only muscular endurance but strength as well.

Body fat is lost primarily through aerobic exercise (not through muscular strength or endurance regimens) but in relatively equal amounts throughout the body. The exact pattern of fat loss is determined genetically and physiologically; this explains why different people store and lose fat in different regions of the body.

7.(a): Again, aerobic training is the best exercise for reducing body fat. (Loss of a certain amount of body fat is the primary objective of any weight loss program.) Weight training increases lean mass (muscle) but has not been clearly shown to be effective in reducing fat mass. A sound dietary approach should be coupled with a good aerobic exercise program.

Only moderate changes in one's eating habits hold any promise of working over a long term. Severe caloric restriction can be maintained only for a short period, is extremely unhealthy, lowers resting metabolic rate, and is therefore rarely ever successful in keeping off lost weight. Exercise programs designed to promote weight loss can be quite different from those that promote improved times on the two-mile run. The latter requires high intensity; the former does not.

Weight loss is a matter of energy balance; if a person expends more energy than he consumes, under normal circumstances, he will lose weight. It does not matter whether this energy expenditure comes from high or low intensity exercise. If the total work done is the same, then intensity becomes irrelevant.

Consider this: A man expends about the same number of calories running five miles, whether he runs it in 30 minutes or 50 minutes! This is a key point for commanders to impress upon their overweight soldiers. A good run distance for a weight loss program is five miles, at any speed.

8.(False): This is a big misconception. Many still think that “spot reducing” is a good technique for fat loss. It simply does not work. When a body needs fat for fuel, it mobilizes that fat in a fairly uniform manner, not on the basis of the muscle groups used. Some fat stores are more easily reduced than others, but this is determined genetically and hormonally. As stated before, aerobic exercise is the best for reducing body fat.

9.(False): Weight training, especially heavy weight training, can increase muscle mass but has not been shown to reduce fat mass nearly as effectively as aerobic training. Furthermore, the total work done in a 45-minute weight training session is much less than that done in 45 minutes of reasonably intense aerobic activity. Since energy balance is a key factor in weight loss, the advantage lies in aerobic training.

10.(False): In the early stages of a diet-only program, most of the weight loss is water. When the body is deprived of food, it consumes — among other stored fuel sources — its own stored carbohydrates. In this process, with each carbohydrate molecule consumed, several water molecules are lost. This is why weight loss, early in a diet, seems quick and easy, but these effects are short-lived.

11.(True): Again, if total work is the same (which it is in a set-distance run) then calorie expenditure is also roughly the same. (See question 7, above.)

12.(True): This, in a nutshell, is what the APFT two-mile run is all about.

13.(False): Here is another common misconception. Circuit weight training, according to the latest studies, does *not* benefit the cardiovascular system in such a way as to improve aerobic capacity. Although heart rate may be within the “training zone,” there is no corresponding increase in oxygen consumption during such exercises. Only a sustained and elevated rate of oxygen consumption such as that found in aerobic exercise can bring about improvements in aerobic capacity.

14.(True): Again, this is the energy balance equation theory, which for healthy people, works fairly well.

15.(True): In analyzing body movement and muscle action, one can think of the human body as a system of levers (bones) moved by attached rubber bands (muscles). Muscles can only pull; they can never push. Therefore, the only muscle groups that are *primarily* involved in the push-up are those involved with arm extension (triceps) and shoulder flexion (pectorals).

16.(False): Again, muscles can only pull, and the primary ones that pull in the sit-up exercise are the abdominals and hip flexors. The back muscles are hardly taxed in the sit-up.

17.(True): As in answer 6, muscular strength is best

improved by heavy weight training in which six to ten repetition maximums are performed for each muscle group. It may be important to point out that six to 10 repetitions are preferred over a one-repetition maximum lift. This is because the total amount of work done in the former, while still in the *muscular strength* window (less than 12 repetitions before muscle fatigue), is far greater than that done in the latter. Hence, overload on the muscle is at its highest.

18.(True): No rocket science here. The combination of the two almost always indicates an onset of obesity. We at West Point believe, however, that if the exercise program is regular enough and intense enough, a person can eat just about as much as he wants (of good foods) and still maintain a desirable body weight and composition.

19.(False): This is the reverse of the spot-reducing idea, and it is equally unfounded. Fat deposit is genetically determined and controlled by hormones in the blood, based on the energy demands of the body. Men typically store excess fat in the abdominal region, and women typically in the hip region. This has nothing to do with inactive stomachs or hips!

20.(False): See answer 5 above.

Try this test on the leaders in your unit. Use the discussion section as a guide to bring home some of the important teaching points. Solicit the help of a master fitness trainer in setting up a professional development session so that the members of your unit can begin to understand what is behind a unit physical fitness program. (Consult Army Regulation 21-20 for exercise program guidelines.)

We recommend that the ideal fitness program be one that ensures not only success on the APFT but also success in performing the unit's mission and in improving its members' quality of life. If your unit is expected to roadmarch, then make roadmarching a regular part of your program. If your soldiers are expected to lift heavy materiel (tank or artillery rounds) or perform heavy equipment maintenance and the like, be imaginative in devising a fitness program that will develop these specific proficiencies. If your unit does nothing physically demanding on the battlefield, make sure your fitness program develops at least aerobic capacity and muscular strength and endurance.

Remember that your unit fitness program is not just what your soldiers do together; it also includes individual effort and time on the part of each soldier in making sure he eats healthy foods and works out regularly and completely.

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COMBAT IN ARCTIC REGIONS

LIEUTENANT COLONEL ROBERT L. MAGINNIS

On some future battlefield, the U.S. Army may face a dangerous and unpredictable adversary — one that defeats the best tactics, the latest technology, and the best-trained soldiers, one that can strike without warning and with great ferocity, and one that can methodically deplete resources until units are combat ineffective. This adversary is the arctic winter, and the Army must prepare now to conquer that foe if it hopes to defeat a modern enemy who may be better able to harness the arctic winter's unique characteristics.

The threat posed by the arctic climate has long been a topic of interest and myth for students of military history. Our Army first experienced arctic combat during World War I in northern Russia in 1918-1919 when Allied troops occupied the ports of Murmansk and Archangel. During this brief period nearly 5,000 soldiers fought the Red Army. The primary lesson we learned from that experience was the not-so-original observation that defensive operations are preferable to offensive operations in the arctic. The Red Army troops reportedly suffered severely as they relentlessly attacked through devastating cold and deep snow in attempts to seize well-fortified Allied positions.

Our brief experience with combat operations in the Aleutian Islands during World War II is not a good example of arctic winter combat because the ground combat took place during the summer. And geographically speaking, the islands are not typical of all arctic regions. (They are typical of other high — and low — latitude archipelagoes with windy, wet, and cold climatic conditions.) Few lessons learned during those operations, therefore, are directly applicable to combat in other arctic regions.

Combat operations in North Korea during the winter of 1951-1952 provided yet another opportunity to study the effects of arctic weather on men, weapons, and equipment under combat conditions. Our forces were not prepared to conquer the Siberian cold especially when it allied itself with the North Korean and Chinese armies, which proved far more capable of enduring the winter weather. It was a severe test, and numerous U.S. casualties were directly attributed to frostbite, respiratory ailments, intestinal disorders, and dehydration. In fact, these non-battle casualties often outnumbered actual battle losses. Additionally, weapons frequently froze shut and winter issue clothing was inadequate for the task.

Today, the Army tests its arctic abilities during bi-annual interservice exercises in Alaska. These Brim Frost (or Arctic Warrior) training exercises provide a test bed for arctic region tactics, equipment, and interservice operations. The record-setting weather of Arctic Warrior 1989 provided an especially severe test of the modern Army's ability to operate under arctic conditions. Many of the all-time record cold temperatures for Alaska and single periods of severe sustained cold were set during this exercise. For example, the site for the Army's major force-on-force battle (the Tanana Flats near Fort Wainwright) experienced an ambient low of minus 76 degrees Fahrenheit — the lowest ever recorded in Alaska. Additionally, the sustained three-week deepfreeze of -50 degrees Fahrenheit or lower truly tested the soldiers and their equipment.

The lessons learned from this exercise, combined with those learned from previous arctic combat experiences, require serious study and future application. They must influence the way the Army equips and trains soldiers for future conflicts that may take place in arctic regions.

The arctic is a foreign concept to the average American, who believes that it is a place of eternal cold, vast wildernesses, uncharted mountain ranges, sparsely populated areas, icebergs, persistent snowstorms, glaciers, spectacular auroral displays, polar bears, penguins, reindeer, and strange people who eat whale blubber as a staple. Much of this is true, and the arctic is also a place of few roads and railroads and little other infrastructure. These combined characteristics partially explain why the arctic regions are probably some of the toughest areas in which to fight wars.

Areas that are included under the "arctic region" umbrella are not well defined. For example, the Arctic Circle is a common, though wholly arbitrary, regional boundary that does not correspond to any physical attributes. Areas within this arbitrary boundary do share at least one common element — the sun does not rise on at least one day a year and does not set on at least one day a year.

Arctic regions are more often referred to as those areas beyond the northern (or southern) limit of trees and the northern (or southern) limit of continuous permafrost. For purposes of this article, arctic regions include the areas generally within the littoral lands of the northern hemisphere: Canada, Alaska, Greenland, Northern Scandinavia, North Asia, and Tibet. They also include the continent of Antarctica, a region south of 60 degrees latitude that is governed by the Antarctic Treaty of 1961.

STRATEGIC IMPORTANCE

The northern arctic regions are of particular strategic importance to the United States. They offer vast non-renewable resources — crude oil, natural gas, coal, nickel, diamonds, zinc, copper, silver, gold, and phosphates. They also have renewable resources such as fur, timber, and fish. The southern arctic regions also have vast non-renewable resources such as crude oil, iron, natural gas, and copper. These regions are likely to experience a major expansion of industrial activity in the future.

They are also important for national security reasons. The northern arctic areas provide a platform from which unfriendly naval movements through northern region "choke points" such as the Bering Strait and the Greenland-Iceland-United Kingdom (GIUK) Gap can be limited. The southern arctic region is equally significant because it dominates the lines of communication between the Atlantic and Pacific Oceans.

The polar areas also offer convenient launching points to any place within the hemisphere. Alaska, for example, is closer to Berlin than New York is and closer to Tokyo than Seattle is. This means troops and equipment stationed in Alaska can move rapidly to more temperate areas within the hemisphere. In most cases, this can be accomplished

quicker than similar deployments from locations in the continental United States.

The lessons that have been learned from past arctic combat operations and from the severe test of Arctic Warrior 1989 are presented here in terms of the battlefield operating systems:

Maneuver. Maneuver in the arctic is complicated by vast distances and severe weather conditions. Mobility, the first of the two dimensions of maneuver, is the cardinal principle of arctic operations.

Although ground transportation in the arctic is restricted by the limited road network, it is still the most reliable. Operational planners must therefore work with the knowledge that distance can be as difficult to overcome as the enemy. Cross-country movement on foot, skis, or snowshoes is especially slow when there are extremely low temperatures, because soldiers must often pull heavy akhios (small sleds) or carry rucksacks burdened with their survival shelters and supplies. Planners must also factor in warm-up time before, during, and after a move.

Cross-country movement by foot in deep snow is practically impossible. Soldiers quickly become incapacitated by the sheer magnitude of their efforts at forward progress. In contrast, skiing is a desirable alternative, because skis afford speed and the ability to negotiate deep snow. Proficiency with military skis is a skill that soldiers can usually master in three to four weeks.

SKIJORING

A complementary skill for trained skiers is skijoring, in which troops mounted on skis are towed behind vehicles with cross-snow capabilities. The number of soldiers that can be pulled by a vehicle is limited by the terrain, the skill of the skiers, and the pull power of the vehicle.

Snowshoes are a slower but useful alternative to skis, especially when restrictive terrain must be negotiated. Snowshoes are generally the best cross-snow item for air assault and airborne troops because they are less cumbersome to transport than skis or cross-snow vehicles.

Long range movement or force projection is a common requirement in arctic regions, and tactical airlift operations often become the lifeblood of many remote military sites. Unfortunately, air operations are dramatically curtailed by weather peculiar to the arctic: ice fog, severe cold, and extreme high pressure. (Ice fog occurs around inhabited areas that produce water vapor when the ambient temperature falls below -35 degrees.) These factors affect such associated operations as essential cargo delivery system (CDS) resupply and airborne assaults.

Helicopters play an important operational role, but they too are hampered by arctic cold. They can be especially difficult to start in extreme cold temperatures — specifically, the batteries that reach low ambient temperatures (become cold soaked) often fail to start the aircraft. This problem can be mitigated if the batteries are removed and placed in warming tents or if auxiliary heating systems are used.

The latter can require a great deal of preparation, however, and they are also subject to cold weather starting problems.

Helicopter operations are limited by the ice fog created by the rotor wash and the engine exhaust, and an aircraft's payload is reduced by the weight of the aircraft-mounted skis and the required survival equipment. In temperatures below -20 degrees, crew performance is limited because internal heating systems are often inadequate to maintain cockpit heat at a reasonable level. The primary concern is the reduced manual dexterity of the pilot due to cold hands and the associated difficulties involved in the wearing of heavy gloves.

Helicopter refueling and rearming can be a limiting factor in any environment, but especially in arctic regions. Fast or hot refueling operations are normally stopped when temperatures fall below 0 degrees. In these situations, a helicopter must be shut down, refueled, and then restarted. The refueling equipment is also subject to start-up problems. Finally, standard hoses, gaskets, and seals begin to crack at -30 degrees.

In tactics, the second component of maneuver, the defense is normally superior to the offense in the arctic because the attacker must contend with the debilitating exposure to the frost and wind chill caused by moving through deep snow, the general lack of available shelter, and the lack of concealment.

The defense has its own problems. Preparing defensive positions, for instance, is a major engineering effort that requires numerous resources. Manning those positions in the extreme cold requires the frequent rotation of personnel to limit their exposure time to the elements. Equipment can become cold soaked, which increases the incidence of mechanical failure.

OFFENSIVE OPERATIONS

Offensive operations in the arctic generally include breaching enemy lines near key terrain. In the arctic, key terrain often consists of road junctions, railroad tracks, buildings, or other man-made features. Most offensive operations will be conducted at night and during periods of limited visibility (ice fog, snow, and blowing snow), and night vision devices can play a key role in these operations. Short violent attacks are typical of arctic offensive operations; rapid exploitation and pursuit are rare.

Fire Support. During the Russo-Finnish war of 1939-1940, the Finnish soldiers concentrated their firepower on the Russians' campfires and destroyed their field kitchens. As a result, the Red Army soldiers could not get the needed caloric intake, could not warm up, and sometimes died of exposure.

Fire support equipment is also severely affected by arctic cold. Mortar units usually note an increase in breakage of firing pins and cracking of base plates. The towed howitzer's traverse and elevation mechanism stiffens at -40 degrees Fahrenheit, and the howitzer itself also may not return to battery when it is fired at low temperatures. Batteries for

the ground laser locator designator (GLLD) do not work below 0 degrees.

Other weapon systems are affected by severe cold, too. The missile guidance system (MGS) battery assembly for the TOW, M220, and the night sight battery power conditioner do not work in severe cold. Wing nuts on the MGS battery break because moisture freezes to the battery base. Finally, the rubber eyeshields on the TOW sight freeze and crack at low temperatures.

Munitions and fuses are especially sensitive to the cold. The 60mm mortar round is not as effective when used at temperatures below 0 degrees. The 2.75-inch rocket performs erratically when used at temperatures below -30 degrees. The howitzer's munition tables only go to -40 degrees, yet during Arctic Warrior 1989 there was a two- to three-week period when the temperature never rose above -40 degrees. Point detonating fuses are less effective in deep snow, and some types of variable timed fuses malfunction at low temperatures.

LESS EFFECTIVE

Target acquisition systems are less effective. The TOW and Dragon night sights experience significant thermal distortion during periods of severe cold. These fire and track systems become almost useless. Too, a gunner often cannot see his target because of the fog generated by the missile's exhaust. Falling snow also affects the performance of all electro-optical systems because of the attenuation and degradation of electromagnetic radiation in the atmosphere.

These acquisition systems are also affected by the limited amount of solar light available during the arctic winter. Snow cover reduces a gunner's depth perception and obscures ground features and landmarks. Ground bursts fired for adjustment are especially difficult to observe on snow-covered terrain. The use of airbursts or colored smoke may help (subject to the environmental limitations of these rounds). Aircraft are often the best observation platforms, but they are just as vulnerable to many of the same environmental conditions.

Fire support system mobility is critical. To support maneuver forces these systems must keep pace. Position options and avenues are limited, and special oversized tires are required for the towed howitzers. Light tracked vehicles such as the upgraded small unit support vehicle (SUSV) — a fiberglass, tracked vehicle for movement over snow — are also necessary. Relocating howitzers by helicopter may be an alternative to using ground transport, but aircraft must also then be available to sustain those positions.

As operational distances increase, close air support (CAS) and joint air attack teams (JAATs) become increasingly important.

Intelligence. All available resources must be used to monitor an opponent in the arctic, and to deny him information concerning friendly forces. One source of friendly information that requires considerable operational

security is the decidedly visible signature Army units generate even during routine operations. For example, in arctic regions, ice fog is usually associated with heavy weapons, engines, and heaters. Heat escaping from tents gives off a distinctive thermal image. Off-road movements are easy to spot because of the impressions troops or vehicles make in the snow. Additionally, aircraft produce significant sound signatures, especially during periods of temperature inversion (when warm air traps super-cooled air on the surface). Helicopters also produce large clouds of blowing snow or ice fog near pick-up and landing zones. These clouds not only hamper visibility, they provide easily identifiable signatures.

Terrain analysis in arctic regions is often difficult because many areas are not well mapped and units may have to call on local guides. Key terrain must also be considered differently — key terrain, for example, is most often a road, a rail line, a stream, or a village.

Local weather monitoring is absolutely essential and the information must be disseminated rapidly to the lowest levels. It is critical to the sustainment of life and the success of operations. Too, temperatures in low areas are often significantly below those on surrounding mountains and hills — an atypical weather phenomenon.

Some of the best combat intelligence is gleaned from two very different sources. First, human intelligence gathering becomes more critical as the electronic intelligence systems become less effective. Indigenous personnel can be useful. Second, air reconnaissance performed by satellites or aircraft can provide timely combat information when vast areas must be covered.

Command and Control. Command and control is extremely difficult on a spread-out arctic battlefield. Mission type orders must be the standard, and they must give subordinate commanders the greatest possible freedom to deal with their extended areas of responsibility, reduced troop density, battle area isolation, and electronic communication difficulties.

MAJOR CHANGES

The restrictions imposed on operations by the extremes of climate and terrain call for major changes in the way we plan and operate in temperate areas. Mobility considerations must be a prerequisite to all planning. Special factors that influence operational planning are low population density, available roads and railroads, lakes and waterways as natural routes of communication or as air strips, and the difficulty of navigation.

Large and irregular magnetic deviations often frustrate personnel who rely on magnetic compasses for guidance. The weather and the rate of cross-country mobility through rugged areas as well as over varying snow cover are all-important planning considerations. Since most operations will be conducted during the long nights, the lack of light and the numbing cold will invariably slow the rate of normal activities.



Communication systems must be redundant. Most electronic systems become especially fragile as the temperature drops. These systems are also vulnerable to ionospheric disturbances common to the earth's polar regions. Radios used before a long warm-up period often cease to operate, and the life of radio batteries is significantly reduced as the temperature drops.

By design, command and control in the arctic must be non-standard. The commander's intent grows in importance as the electronic communication systems' reliability declines.

Mobility, Countermobility, and Survivability. The Germans discovered in World War II on the Eastern Front that land mines often failed, because the deep snow cushioned a mine's fuse or delayed its action. Additionally, the constant cycles of melting and freezing snow around a mine often created an ice bridge over the detonator, which either kept the pressure sensitive mines from functioning or caused them to function prematurely.

But a combat engineer in an arctic region does more than set and retrieve mines. He constructs fortifications, maintains or constructs snow roads, drop zones, helicopter landing and pick-up zones, and airfields. These efforts consume a disproportionate part of any unit's expendable resources and resupply capability. But no one denies their

overwhelming importance to the success of an arctic operation. Arctic roads can be hundreds of miles long. They may include ice bridges that cross large bodies of water (rivers or lakes). The science of siting and constructing ice bridges is an essential skill for arctic combat engineers.

Fortifications are especially difficult to construct in the arctic, because frozen ground takes four to eight times as much effort to excavate as thawed earth. Often heavy equipment or explosives provide the only timely means of moving frozen earth. Solidly packed snow is an alternative building material, but at least 6½ feet of solidly packed snow is required for adequate protection from most small arms fire. Water can be added to the packed snow to increase the snow density, but water is especially scarce, hard to transport, and as vital to the soldier in the arctic as it is to the soldier in the desert. Finally, snow becomes brittle and deteriorates rapidly under sustained fire.

Logistic support in the arctic is affected by the need to sustain widely dispersed forces usually located on rugged terrain connected by often unreliable ground communication systems. The sustainment of support is further hampered by the general absence of host-nation civil and industrial facilities that can be used by the military services in time of war.

Combat Service Support. Combat service support is critical as it applies to selected classes of supplies, medical support, and maintenance.

Combat rations present an especially difficult supply problem in the arctic, and special care must be taken in storing them. Cold is especially hard on the meal, ready to eat (MRE). The ration containers often burst in severe cold, and the rations themselves can be thawed only once without spoiling.

The tray ration (T-ration) is a bulky alternative. Unfortunately, the mobile kitchen trailer (MKT), which is the primary field facility used to prepare the T-ration, is worthless in the arctic. More often than not, soldiers devise their own T-ration heating techniques such as heating a ration on top of a hot Yukon stove.

Water is one of the most precious resources in the arctic. The chief sources of water are generally rivers or lakes, but retaining liquified water in containers is especially difficult. Auxiliary or swingfire heaters — attachments used to winterize almost all equipment — must be kept burning constantly to keep the water trailers from freezing. Too, in spite of what seems an unlimited supply, snow is seldom used as a water source because it takes 17 cubic inches of snow to produce one cubic inch of water. For this reason, melting snow is not recommended for supplying water except in emergencies.

The soldiers' clothing and equipment must be specially designed to protect them against the elements. Unfortunately, our individual arctic clothing and equipment leave something to be desired.

For example, although the Army-issued Gortex parka is effective in cold and wet climates, it may crack when exposed to dry arctic cold, and the metal fasteners can cause frostbite when touched. The hood will not pull over the helmet, and it needs a ruff to help retain the heat. The important vapor barrier (BV) boot is generally effective down to about -40 degrees. Below that even the newest boots get dangerously cold. The metal arctic canteen is worthless in severe cold — it freezes almost as fast as temperate climate canteens. Finally, the Type II sleeping bag provides insufficient protection below -35 degrees, and many arctic soldiers buy commercially available sleeping pads and sleeping bags or inserts to help fight the severe cold.

Medical support is especially difficult in the arctic, because the evacuation of casualties is plagued by the same problems as other transportation systems. Dehydration is an especially serious problem. Leaders must force their soldiers to increase their water consumption as their level of activity increases.

Frostbite, though, is probably the most common arctic medical problem. Generally speaking, good leadership, personal hygiene, and dry clothing can prevent most frostbite injuries.

The cold can subject most equipment to stresses and strains it was not designed to endure. Fan and alternator belts frequently snap; batteries cannot sustain the drain of energy; vehicle and aircraft seals are more likely to fail during

start-up procedures at temperatures below -40 degrees. Vehicles must be kept running for extended periods, and vehicles that are not moved may freeze to the ground. Tires often develop flat spots when left in place too long, and these tires may then shatter if they are not properly used. Fuel lines crack and break. Even high viscosity lubricants congeal in very cold weather. Diesel fuel begins to gel at -58 degrees. JP-4 (aircraft fuel) gels at -75 degrees; the Herman Nelson heating system is unreliable below -35 degrees.

Finally, in the arctic, it takes up to five times as long to do even the simplest maintenance task. For example, it takes five men eight hours to establish a maintenance tent at 60 to 70 degrees, and those same five men 40 hours to establish the same tent when the temperature falls to -40 degrees.

CSS in arctic regions requires great initiative, more time, and larger amounts of all classes of supply as the temperature falls. Operational planners must listen to and heed the sage advice of the arctic logistician.

The Soldier. Although not a formal battlefield operating system, the soldier is a critical aspect of preparing for and winning in the arctic.

An arctic warrior must be in outstanding physical condition. He must be fit to carry heavy loads over long distances, up and down mountains. He must be capable of traversing glaciers, and of crossing vast areas of tundra and windswept frozen lakes to find and destroy the enemy. He must understand arctic weather and how to sustain himself using the available resources.

An arctic warrior must also understand small unit operations. He must understand that command in the arctic is, by nature, decentralized to insure maximum flexibility for all leaders. He must be resourceful and prepared to take the initiative to follow through with his commander's intent. He understands that success in the arctic means detailed planning and preparation. He appreciates thorough preparations.

The arctic regions are especially enticing to a resource-hungry world and may become the final earth-borne frontier to be exploited. The race to exploit the wealth of these regions will be won by the strongest and most innovative country. As the economic competition begins, the U.S. Army must be prepared to provide an arctic capability that can protect the United States' interests. It should do this by continuing to emphasize joint service arctic region exercises that familiarize its personnel with the severity of the arctic climate. It should update its old and outdated field and technical manuals with the latest arctic information. It should also test and field equipment that is capable of sustaining a modern force against the rigors of the earth's most formidable climates.

Lieutenant Colonel Robert L. Maginnis recently completed an assignment with the 6th Infantry Division in Alaska, serving as a battalion S-3 and executive officer and as a brigade S-3. He is now assigned to the Office of the Inspector General, Department of the Army.

TRAINING NOTES



Pre-Ranger Training

EDITOR'S NOTE: This article was prepared by the staff of the Ranger Training Brigade. It is the second in a three-part series designed to prepare Ranger candidates to meet the Ranger Course's challenges. The third article in the series is presented as the Commandant's Note in this issue. In it, the Commandant of the Infantry School discusses certain changes that will be made in the Ranger Course during the coming fiscal year.

As the Commandant of the Infantry School has said earlier in this issue, the Ranger Course conducted by the School's Ranger Training Brigade is the Army's premier leadership course. The soldiers who graduate from it are hardened, competent, small unit leaders who are confident they can lead units into combat and overcome all obstacles to accomplish their mission.

Pre-Ranger training helps prepare future Ranger Course students for the physical and mental rigors of the U.S. Army Ranger School. Throughout the Army, many units dedicate resources to prepare their soldiers for this excellent leadership training experience. However, modern course design, continued high attrition, increased enrollment, and decreasing budgets mandate that the Infantry School and the sending units work together to select and prepare

soldiers who are fully prepared for Ranger School. Selection and preparation are the keys to success, especially when considering that course enrollment since the mid-1980s has increased 47 percent while the number of course graduates has increased only 26 percent.

COMPARISON

The impact of supervised Ranger student preparation can be measured partially by a comparison of enrollment and graduation rates. Those students with pre-Ranger training have had a 13 percent higher enrollment rate (meeting medical, administrative, PT, and swim test requirements) and an additional 13 percent higher graduation rate than those who declared they had had no preparatory training. Most noticeably, students who attend pre-Ranger training have a much lower medical attrition rate. (For additional attrition information, see "The Ranger Course," *INFANTRY*, May-June 1991, pages 37-39.)

The Ranger Training Brigade during any given year welcomes more than 3,000 Ranger candidates. Unfortunately, more than one-third of those soldiers do not successfully complete the Course's graduation requirements. (See "The Ranger Course," *INFANTRY*, May-June 1991, pages 37-39.)

Concepts for pre-Ranger training

vary by type of unit and varying command emphasis or guidance. All sending units, including officer basic and advanced courses, can reduce their Ranger student attrition rates by conducting tailored pre-Ranger training and preparation. The Infantry Officer Basic Course (IOBC) provides prerequisite training in its program of instruction; however, physical fitness and swim test validation, and additional foot marching and land navigation training are highly recommended. Other OBCs and OACs should tailor their supplemental training as required. These officer courses may consider designating either school cadre or student OICs to conduct and evaluate training.

TOE unit concepts also vary significantly. All major field prescribers currently conduct pre-Ranger programs. The vast majority of these are centralized at division or regimental (75th Ranger Regiment) level, although some decentralize their pre-Ranger training to brigade or even battalion level. In general, those units that do not require commander and senior NCO supervision of Ranger student preparation suffer higher attrition than the class average.

Due to changes in the Ranger Course, some preparation adjustments are necessary to ensure that Ranger candidates are competitive upon their arrival at Ranger School. Two critical changes are:

- The Ranger Assessment Phase (RAP), which was effective with Class 11-91 (26 July 1991), evaluates individual skills and test requirements that are essential for successful course completion. During the first four days, RAP evaluates the skills shown in Figure 1 and should both *confirm and reinforce the student's mental resolve* to graduate from the course.

- A revised prerequisite skills list (Figure 2), requires unit commander certification. These skills will be reflected in FY1992 revisions to DA Pamphlet 351-4, *The Army Formal Schools Catalog*, and in new editions of SH 21-75, *The Ranger Course Pamphlet*.

Both of these changes are especially important to all pre-Ranger training programs. Pre-Ranger training should *objectively certify* future Ranger stu-

dents on the prerequisite skills and on all RAP tasks, while *subjectively confirming the mental resolve* to overcome course challenges. Current pre-Ranger programs in TOE units vary in duration from 11 to 21 days. Two weeks is sufficient time to test and train prospective candidates on the abilities necessary to start the course. An example two-week POI outline is at Figure 3. As a suggested minimum, units should pre-test students on RAP tasks and conduct a 72-hour field training exercise (FTX) to assess their mental toughness as well as their tactical leadership proficiency.

To further focus their pre-Ranger training programs, the following recommendations are provided:

- Ensure that each candidate receives a complete physical examination by a medical doctor before starting pre-

Ranger training. (Each candidate must have a current physical in his file when he reports for the Ranger Course at Fort Benning.)

- Provide each candidate a copy of SH 21-75 and ensure that each knows and understands its contents and complies with equipment requirements.

- Establish a rigorous physical training program aimed at meeting or exceeding the RAP standards. This program should increase the soldiers' confidence and help overcome anxiety when they are evaluated on their physical skills during the RAP.

- Develop the candidates' land navigation skills on as wide a variety of navigation courses as possible, and include a number of map and compass exercises to build their individual proficiency and confidence.

- Evaluate potential Ranger Course

RANGER ASSESSMENT PHASE

DAY 1

1. Army Physical Fitness Test: 52 push-ups, 62 sit-ups, two-mile run in running shoes (14:54 or less), and 6 chin-ups.
2. Combat Water Survival Test (CWST):
 - a. 15-meter swim: with rifle, wearing BDUs, boots, and load carrying equipment (LCE) (pistol belt, suspenders, two ammunition pouches, and two full canteens).
 - b. Three-meter drop: Walk blindfolded off a three-meter high diving board with LCE, enter the water, remove blindfold, swim to poolside.
 - c. Equipment removal: wearing BDUs, boots, and LCE and carrying rifle. Enter water from poolside, submerge, discard rifle and LCE, surface, and swim to poolside.

DAY 2

1. Five-mile run in running shoes, eight minutes per mile.
2. Eight-mile footmarch, 15 minutes per mile, with a 35-pound rucksack, LCE, and helmet.

DAY 3

1. Daylight compass course.
2. Night compass course.

DAY 4

1. Ranger Stakes consisting of 10 of the following 13 tasks:
 - a. Maintain an M60 Machinegun. (071-312-3025, STP 7-11B, Page 3-270)
 - b. Load an M60 Machinegun. (071-312-3027, STP 21-1-SMCT, Page 251)
 - c. Prepare a Range Card for an M60 Machinegun. (071-312-3007, STP 7-11B, Page 3-260)
 - *d. Perform Operator Maintenance on an M249 Machinegun (SAW). (071-312-4025, STP 7-11B, Page 3-130)

*e. Operate an M249 Machinegun.

(071-312-4027, STP 7-11B, Page 3-151)

f. Employ an M18A1 Claymore Mine.

(071-325-4425, STP 21-1-SMCT, Page 317)

g. Send a Radio Message.

(113-571-1016, STP 21-1-SMCT, Page 47)

h. Encode and Decode Messages Using KTC 600 Tactical Operations Code.

(113-573-4003, STP 7-11B, Page 3-454)

i. Maintain an M16A1 or M16A2 Rifle.

(071-311-2025, STP 21-1-SMCT, Page 110)

j. Correct Malfunctions on an M16 Rifle.

(071-311-2029, STP 21-1-SMCT, Page 152)

k. Perform a Functions Check on an M16A1 or M16A2 Rifle.

(071-311-2026, STP 21-1-SMCT, Page 135)

l. Employ Hand Grenades.

(071-325-4407, STP 21-1-SMCT, Page 304)

m. Maintain an M203 Grenade Launcher.

(071-311-2125, STP 7-11B, Page 3-192)

*These tasks will not be tested at least until the second quarter FY 92 due to nonavailability of SAW.

Note: SAWs will be maintained at RTB for those individuals who do not have access to SAWs for the hands-on portion of training before RAP testing.

2. Students must receive a "GO" on seven of the ten tasks; one retest is allowed per failed task.
3. Retests for day and night land navigation will also be administered on Day 4.

Figure 1

PREREQUISITE TASKS

1. Call for and Adjust Indirect Fire.
(061-283-6003, STP 21-24-SMCT, Page 55)
2. Camouflage Yourself and Your Individual Equipment.
(051-191-1361, STP 21-1-SMCT, Page 393)
3. Use KTC 1400 Numerical Cipher/Authentication System.
(113-573-4006, STP 7-11B, Page 3-457)
4. Navigate From One Point on the Ground to Another Point While Dismounted.
(071-329-1006, STP 21-24-SMCT, Page 21)
5. Determine the Grid Coordinates of a Point on a Military Map.
(071-329-1002, STP 21-1-SMCT, Page 76)
6. Determine a Magnetic Azimuth Using a Lensatic Compass.
(071-329-1003, STP 21-1-SMCT, Page 90)
7. Determine the Elevation of a Point on the Ground Using a Map.
(071-329-1004, STP 21-24-SMCT, Page 36)
8. Determine a Location on the Ground by Terrain Association.
(071-329-1005, STP 21-1-SMCT, Page 87)
9. Measure Distance on a Map.
(071-329-1008, STP 21-1-SMCT, Page 105)
10. Convert Azimuths.
(071-329-1009, STP 21-24-SMCT, Page 28)
11. Determine Azimuth Using a Protractor.
(071-510-0001, STP 21-24-SMCT, Page 45)
12. Orient a Map Using a Lensatic Compass.
(071-329-1011, STP 21-24-SMCT, Page 30)
13. Orient a Map to the Ground by Map Terrain Association.
(071-329-1012, STP 21-1-SMCT, Page 72)
14. Locate an Unknown Point on a Map and on the Ground by Intersection.
(071-329-1014, STP 21-24-SMCT, Page 39)
15. Locate an Unknown Point on a Map and on the Ground by Resection.
(071-329-1015, STP 21-24-SMCT, Page 42)
16. Prime Explosives Non-electrically.
(051-193-1003, STP 7-11B, Page 3-480)
17. Clear a Misfire.
(051-193-2030, STP 7-11B, Page 3-488)
18. Practice Preventive Medicine.
(081-831-1043, STP 21-1-SMCT, Page 338)
19. Prepare an M136 Launcher for Firing (AT4).
(071-054-0001, STP 21-1-SMCT, Page 199)
20. Operate Night Vision Goggles AN/PVS-5.
(071-315-0030, STP 7-11B, Page 3-340)

Figure 2

SAMPLE PRE-RANGER POI

ADMINISTRATIVE

In-processing/out-processing
Supply issue/turn-in
Briefings
Medical brief/safety

PHYSICAL TRAINING/CONFIDENCE

APFT
CWST
Physical training (including five-mile run, 8-12 mile footmarch)

INDIVIDUAL TRAINING

Communications
Fire support
Medical (self/buddy aid)
Troop leading procedures IAW FM 7-8
Weapons proficiency
Platoon leader, platoon sergeant, team leader responsibilities

LAND NAVIGATION

Diagnostic map test
Map reading/route selection
Day course (practice)
Night course (practice)
Day and night course (graded) with required retests

6-DAY FTX

Ambush, raids, recons, MTCs, OPORDs, warning orders

PATROLLING TECHNIQUES*

Patrolling diagnostic test
Introduction to patrolling
Warning order
Operations order
Departure/reentry FFU
Patrol base activities
Link-up operations
Coordinations
Reconnaissance
Ambush/raids
FTXs

*NOTE: These techniques will be taught extensively in Ranger school but are recommended pre-Ranger training subjects for non-infantry students, or for individuals who have not yet served in TOE unit leadership positions.

Figure 3

students' desire and commitment by subjecting them to stressful tactical situations in the conduct of reconnaissance, raid, and ambush missions. For example, the students may be allowed little food and sleep, within the limits dictated by safety concerns and common sense, and should be required to apply fieldcraft to protect themselves and their equipment.

- Identify candidates for the Ranger Course through chain of command observation and selection, intensive training, and continuous evaluation.

Units should be careful, though, not to burn these soldiers out before sending them off to Benning. In fact, depending upon the stress and length of the unit courses, soldiers should be given at least 10 days to recover from the effects of their pre-Ranger training program.

- Allow candidates to attend summer course Zero Week training at Fort Benning to become acclimatized for hot weather challenges.

Pre-Ranger programs assist the chain of command in the selection and preparatory training of future Ranger

students. Statistics show that students entering the Ranger Course with a pre-Ranger Course background perform better, have significantly fewer disqualifying injuries, and have a much lower attrition rate. A good pre-Ranger training program can give the needed edge to a soldier in his quest for the coveted black-and-gold Ranger tab.



Desert Navigation Devices

CAPTAIN THOMAS E. BERON

Two articles on desert navigation have appeared in *INFANTRY* during the past year, and both helped the units in Operations DESERT SHIELD and DESERT STORM find their way into Iraq. (See "Desert Navigation," by Major Richard G. Reynolds, July-August 1990, pages 18-23, and "The Middle East: A Traveler's Guide," by Charles L. Black, *PAST TIMES*, November-December 1990, pages 28-31.) Neither of them, however, addressed the use of the electronic navigation aids that many units were issued in Saudi Arabia — the Global Positioning System (GPS) and the LORAN (a long-range radio position fixing system). The experience of one battalion task force — 2d Battalion, 18th Infantry — may prove helpful to other units.

The task force was issued two handheld LORANs just before deploying to Saudi Arabia. Initially, commanders, staff officers, and several soldiers in each company were trained to use them. They became task force property and were maintained by the S-3. They could be signed out by companies for particular training requirements and familiarization. Several more trickled in during DESERT SHIELD and by the start of the ground war every commander and staff officer had one and could operate it effectively.

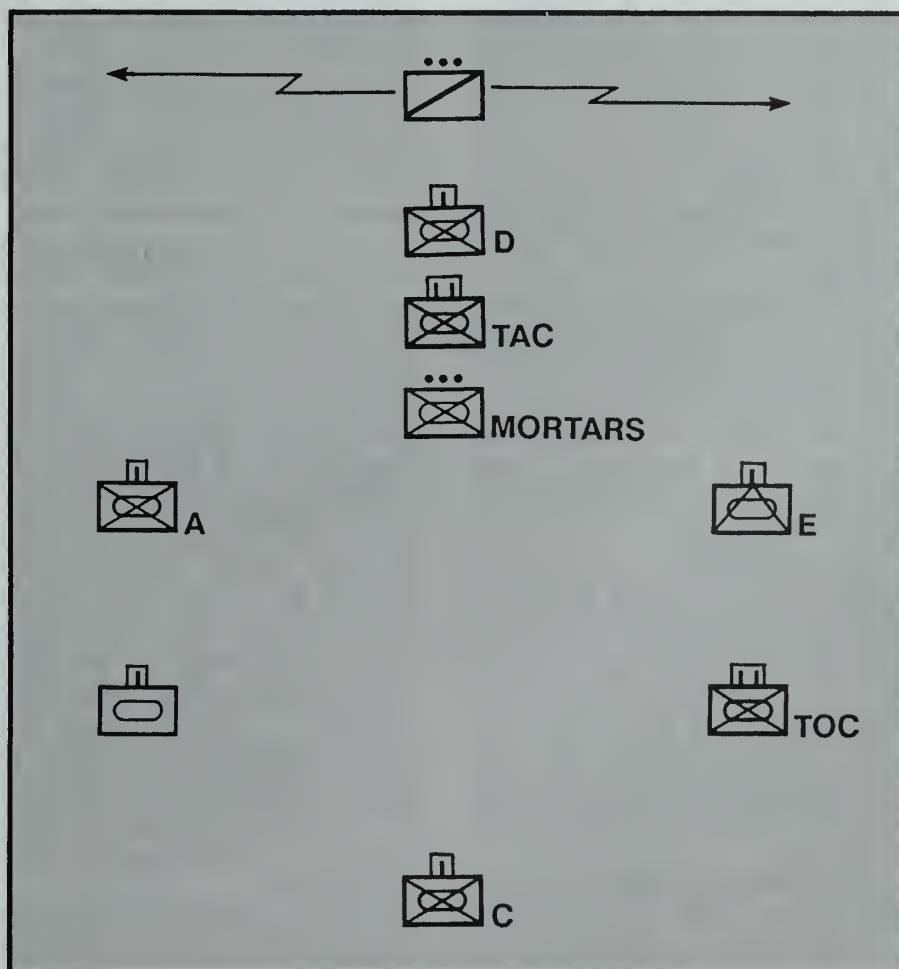
Before the ground war started, the task force also owned five GPS devices. One, which had been issued in September 1990, was inoperable and no repair facility was available. The remaining four systems were issued to the mortar platoon, the scout platoon, the S-3, and the commander of Company D. They were so allocated for reasons

related to the task force's mission, movement formation, and navigation plan.

The task force was part of the 24th Infantry Division; its mission was to drive from the Saudi Arabian-Iraqi border to the Euphrates river valley — some 370 kilometers in all. Because of the great distance, the lack of visible terrain features, and the imposed time constraints, navigation was critically important. The task force commander

decided to proceed on a series of azimuths within his sector and, when possible, to follow existing trails to make route navigation easily understandable to every soldier involved. The task force moved in a box formation as depicted in the accompanying diagram.

By assigning each person with a GPS specific duties and responsibilities, the commander ensured that the available GPS devices were used to best advantage.



The scouts were responsible for forward reconnaissance, and for reporting the task force's frontline trace during movement. Obviously, since they could then be assigned to do a flank reconnaissance mission or could even be detached, it was crucial for the commander to know where they were at all times.

Company D, the advance guard, was responsible for keeping the main body of the task force on course. Because the company could not always keep visual contact with the scouts, its requirement for GPS was also justified. Every ten minutes (while moving), the company commander reported his current eight-digit grid on the task force command net. Other commanders and the TF staff officers, by understanding their position in the formation relative to the Company D commander, could then do a resection to find their own positions.

To aid visual identification, the company command track displayed an orange VS-17 panel on its rear door. This allowed anyone on the command net who could see that vehicle to identify it quickly before it moved from the grid location it had reported. The TF also had a contingency plan that called for the lead vehicles to drop green hand-smoke at grid locations to help those furthest back, but this never proved necessary.

Concerns about the amount of extra radio traffic on the task force net did not become a problem. The S-3 moved with the tactical command post and acted as backup for the commander of Company D. He was also the mobile GPS moving to any special spots such as TF release points.

The mortar platoon leader used his GPS for gun emplacement and for task force navigation when other systems had problems with signal strength. During movement, LORAN was used only to augment and verify the accuracy of the GPS. Several companies that had specific missions at march objectives, though, used LORANs without GPS verification.

The reliability and accuracy of the two devices varied. Since the GPS receives its data by satellite, it was



subject to satellite availability. Normally, the satellites were on station about 20 hours a day, while LORAN, based on a ground transmitter system, was almost always available. GPS was much more accurate than LORAN but less available. GPS can be powered by an internal battery or a vehicle battery through an external power cord. The internal batteries, which were special ones, presented a problem in that none were available on the local market.

Only severe dust storms seemed to affect the accuracy of LORAN readings. Unlike GPS, though, anyone setting up LORAN to read particular ground stations had to have a working knowledge of the particular LORAN model he was using. Three ground stations were programmed into the device on the basis of which part of the country a unit was operating in. The LORAN then triangulated its position from those stations' signals. The whole process was complicated by the quietly announced closure of a key station near the Kuwaiti-Saudi Arabian border because of the war. That problem was eventually solved by omitting the closed station from the programmable station position list. LORAN then became a good tool.

Later models were issued with a built-in program to convert latitude and longitude readings to military grids. In addition, the LORAN could be operated with either 9-volt or AA batteries; local purchase and personal stereos provided a steady supply.

To augment both of these electronic systems, all companies had at least one

platoon leader or squad leader reporting his position regularly from map and compass readings. Distance was determined by an odometer average, but the lack of terrain relief in the desert and map inaccuracy limited the effectiveness of this method over long distances.

There are many ways to use LORAN and GPS. Both are good tools, particularly suited for desert navigation and its inherent constraints. Leaders should be careful, though, not to let their soldiers rely solely upon electronic navigation. Because these devices are so simple to use, it is easy for someone to let them do all of the navigating while he just reads number displays. This is especially true when it comes to plotting way points and letting LORAN or GPS give heading corrections. In terrain where relief is more prominent than it is in the desert, small unit leaders should navigate with maps and compasses and use electronics only to verify their locations. Not only does this give them practice in navigating, it also teaches them to become familiar with the ground in case they become separated from their maps.

This battalion task force's experiences in Southwest Asia demonstrated that the GPS and LORAN are effective devices for navigating in the desert.

Captain Thomas E. Beron commands Company E, 2d Battalion, 18th Infantry, which participated in Operations DESERT STORM and DESERT SHIELD. He previously served in the 6th Battalion, 502d Infantry, Berlin Brigade. He is a 1984 graduate of Tulane University.

Reconnaissance in the Desert

LIEUTENANT ROBERT FRIEDENBERG

Operations DESERT SHIELD and DESERT STORM went a long way toward validating the doctrine that we infantrymen have followed since the inception of the AirLand Battle. The concept of outmaneuvering the enemy and hitting him violently and decisively proved justified. As an airborne infantry scout platoon leader, though, I found that much of the doctrine I had been using and relying upon had to be altered to fit the change in topography.

A light infantry scout platoon trains to conduct dismounted reconnaissance missions forward of the FLOT (forward line of own troops) and send any information it finds back to the battalion S-2 and S-3. They in turn inform the battalion commander so that he can make a decision. And in a fluidly changing AirLand Battle situation, information must be transmitted quickly.

While training the platoon at Fort Bragg, North Carolina, I emphasized a squad's ability to move quickly to the objective and conduct aggressive reconnaissance while also using stealth to avoid compromising the mission. In the dense pine forests and thickly vegetated low grounds in and around Fort Bragg, moving undetected was relatively easy. The platoon became used to conducting reconnaissance close to the objective, sometimes even getting within the enemy's perimeter.

Once the squads completed their missions, they could pull back to the safety of the dense woods. The headquarters element could resupply the squads so they could operate for extended periods. During every field problem, the situation was similar, and our SOPs for insertion, extraction, and

resupply were all based on operating in a woodland environment.

Soon after our arrival in Saudi Arabia, I realized that those tactics were going to be useless. The desert provided much less security, and we quickly learned that we had to conduct reconnaissance farther out from our objective.

During the scouts' first mission — a static screen as part of a battalion antiarmor defense — problems soon became apparent. The area we operated in contained flat salt lakes interspersed with low rolling dunes. The only vegetation on the dunes was sparse date palm and scrub brush. With little natural concealment, the squads had to dig deep into the sand, lowering their profiles as much as possible.

STUDY TERRAIN

Although high ground is usually the best place to establish an observation post (OP), in the desert it is vulnerable because it is such an obvious place and is so easily spotted by the enemy. We had to study the terrain more carefully and choose less obvious OPs while still maintaining good fields of observation.

Resupply also posed a challenge. We found the most effective method was to set up cache points behind the OPs (usually about 500 meters) and to establish times for the squads to move to the caches to pick up water and food. Moving the resupply vehicle any closer to the OPs would have risked compromising them.

The next obstacle to be overcome was long distance dismounted movement. During an external evaluation (EXE-

VAL) that included movements of as much as 15 kilometers, we discovered that the squads needed to disperse much more than normal. Movement could be conducted only at night, and the squads had to be in place before sunrise to avoid being caught moving in the open during daylight. Dismounted reconnaissance in the desert requires that the squads look at the objective from a greater distance. Moving too close risks compromise, and evading capture is difficult in the open desert.

Although we accomplished our missions during the EXEVAL, I learned that dismounted movement in the desert was not efficient. Using vehicles was quicker, and we could cover much more ground and increase our survivability at the same time. Without natural concealment, dismounted movement over long distances risked compromise, and the use of vehicles was a tremendous asset. There is nothing in the Scout Mission Training Plan that covers reconnaissance operations in the desert, however, and I had to look elsewhere for guidance.

I approached the Special Forces liaison officer to the 82d Airborne Division, who commanded an "A" Detachment in the 3d Special Forces Group. This Group trains extensively in the desert. Its SOP leaned heavily on the lessons learned by the Long Range Desert Group, predecessors of the British Special Air Service, which had conducted effective mounted reconnaissance missions in the desert of North Africa during World War II.

He and I then planned a field training exercise (FTX) to learn and practice some of the techniques. Along with the

scout platoon, an antitank platoon from Company D equipped with TOW HMMWVs (high mobility multipurpose wheeled vehicles) participated in the exercise.

The topics covered during the FTX included mounted land navigation using compass and odometer to cover long distances, desert survival, hand to hand combat, and medical training. Over the course of three days, we navigated to pre-designated points, identical to a dismounted land navigation course. We learned that long-range navigation in a vehicle is more effective when certain techniques are used:

- An azimuth should be taken outside the vehicle first (with the engine off), then inside, and the difference noted. Because of the magnetic effects of metal and radio interference, compass azimuths can be off by as much as 20 degrees when taken in vehicles. Each compass and vehicle will vary in the azimuth differences.

- The vehicle odometer is effective in measuring distance, but 10 percent should be added to the map distance to make up for wheel slippage in soft sand.

- It is best to use a primary and an

alternate compass operator, with the primary operator sitting in the passenger side front seat and the alternate (if in a cargo HMMWV) in the back, midway between the driver and the commander.

Using these techniques, we were able to navigate legs as long as 15 miles with little error in azimuth or distance.

The FTX culminated in a final area reconnaissance mission. The objective was a resupply point in open low ground surrounded by several large hills. The plan was for three vehicles to move the three scout squads to dismount points, each about 1,000 meters from the objective. The squads would then move on foot to the objective, and the reconnaissance would be made from three different directions.

I placed a TOW HMMWV equipped with a thermal sight on high ground about 2,000 meters from the objective to act as an early warning for the squads against possible enemy counter-reconnaissance patrols. The thermal sights were effective, and the squads now could be given advance warning to pull back if necessary. The squads dismounted at pre-designated points and, when they had finished their mission, moved to pre-coordinated

exfiltration points. (They could also move to the exfiltration points in case of trouble.)

Once a squad was in a vehicle, its survivability increased dramatically, and it could quickly get out of danger. The TOW vehicle in overwatch could take out any enemy armor that threatened either a dismounted squad or a vehicle. The use of vehicles and dismount points combined both the mobility of vehicle reconnaissance and the stealth and close observation of dismounted patrolling.

My initial observations of dismounted reconnaissance in the desert had led me to believe that it was ineffective. But after trial and error, and a little improvisation, I came to believe that leaders can combine mounted and dismounted operations to conduct effective reconnaissance missions.

Lieutenant Robert Friedenberg was scout platoon leader of the 1st Battalion, 504th Infantry, 82d Airborne Division, during Operations DESERT SHIELD/DESERT STORM, and is now a company executive officer in the same battalion. He also participated in Operation JUST CAUSE. He is a 1988 ROTC graduate of the University of Texas.

Tactical Night Climb

LIEUTENANT COLONEL WILLIAM M. MENNING
LIEUTENANT COLONEL STEPHEN R. SANDS

When most people think of military mountaineering, they picture soldiers making dramatic bounding rappels and mules patiently carrying ammunition boxes. Military mountaineering, in fact, includes a broad spectrum of individual and unit skills.

The Army's only mountain battalion — the 3d Battalion, 172d Infantry, Vermont

Army National Guard — has the mission of conducting offensive and defensive operations in mountainous terrain under all climatic conditions. This means it must be able to destroy either dismounted or armored forces in any weather conditions, in any season, day or night, and in all types of operations.

Individual military mountaineering skills that support these missions include operating in extreme weather conditions and in steep terrain; establishing and negotiating fixed ropes, alpine ladders, suspension traverses, and rappels; moving over snow, ice, and glaciers; and conducting basic rock climbing.

Unit military mountaineering skills

focus on extensive independent combat by small units; maneuver to encircle an enemy force or to preempt an enemy force from seizing critical high ground; the effective employment of obstacles; the tactical employment of helicopters; and the inevitable difficulties of resupply and evacuation.

The battalion's rifle companies fight primarily in the rough terrain (slow-go or no-go) found in the mountains. To support the companies' mobility, therefore, a few soldiers in each platoon receive more extensive training in climbing so that they can install fixed ropes for their unit. This climbing, in the finest traditions of the infantry, is most likely to succeed during the hours of limited visibility. Accordingly, night climbing is an important skill other units should learn as well, particularly those like Rangers and Special Forces, who may be called on short notice to operate in high terrain.

Although Training Circular 90-6-1, Military Mountaineering, provides detailed information on conducting climbing operations in general, it does not discuss the peculiarities of night climbing, the most likely tactical requirement.

Several prerequisites are necessary to the success of a night climb:

- Each soldier taking part in a climb must have an exceptional navigational sense and a good background in climbing.
- A unit must have an exact route description — preferably including both a sketch of the route and an opportunity to observe the route during good visibility.
- Although it is theoretically possible to climb in absolute darkness, depending solely upon the sense of touch, as a practical matter, some light is necessary. Climbers can use moonlight, headlamps similar to those miners use (the tactical situation permitting), or night vision devices.

On the basis of the mountain battalion's need for training in night climbing, the National Guard Mountain Warfare School at Jericho, Vermont, has integrated a night climbing exercise into its summer course of instruction.

During this training, the students conduct a one-pitch climb using night vision goggles (NVGs).

Soldiers and leaders alike quickly learn that night training is not as easy as taking what they have learned during daylight hours, putting on goggles, and beginning to climb. Climbing is stressful physically and, for beginners, is stressful emotionally, too.

Leaders must make sure their soldiers are adequately trained in using their



NVGs before they attempt demanding tasks during periods of limited visibility. Even with the de-misting shields, the NVGs are effective only for a limited time before they become fogged to the point of being more a liability than an asset. The climbing must be planned so that there are periods in which to cool off and clear the fog.

Meticulous pre-combat checks must be performed on the goggles. A climber should not have to discover, while trying to negotiate a strenuous overhang with marginal handholds, that an NVG's battery is weak or that one of its friction knobs is loose.

In addition, because a climber must alternately look at handholds and footholds that are close to his face and then at more distant features on his

route, the students must focus their NVGs so that they can see both near and far. One eyepiece must be adjusted for near vision and the other for distant vision.

The Mountain Warfare School makes sure all students receive some training in the following: the human eye, types of vision, dark adaptation, night viewing techniques, visual illusions, environmental considerations, and the operation of the NVGs themselves to achieve proper focus.

After receiving training on their NVGs, and after performing during daylight hours all of the tasks they will then have to perform during hours of darkness, the students must go through several nighttime performance tests wearing their goggles before being allowed to climb. Among these are a knot test, a focus test for both near and far vision, and pre-operation checks on the equipment. During a night climb, the school uses three instructors for each student not only for safety reasons but also to aid the students throughout the exercise.

After completing a nighttime balance climb, the students must then complete a nighttime rappel with NVGs. Emphasis is placed on the following before these climbs are attempted:

- When moving together on easy terrain at night, roped-up climbers must be closer together than during daylight, and when more than one team is climbing, the interval between teams must be shorter. The climbers must be more deliberate and more careful to avoid dislodging stones.
- A climber who strays from the climbing route during daylight may be able to work his way back onto the correct route. At night, though, he will usually have to climb all the way back down to get back on course; otherwise, he is likely to get even farther off.
- The members of a climbing team usually have to stop moving together and start their actual climbing sooner at night than during daylight conditions, and they have to climb in shorter pitches. The use of more frequent belay positions will cause a slower rate of movement, but this will ensure more

accurate route finding and better communications.

- When climbers are conducting a rescue, it may be possible to illuminate the climbing area with a searchlight located some distance from the area. In this case, a ground observer may help the climbers by communicating route corrections to them. Radio communication can certainly facilitate this process. In a tactical climb, the belayer and the climber may relay simple signals

through prearranged tugs on the rope, although a radio may be necessary to ensure there are communications between the climbing team and the rest of the unit.

Conducting a tactical night climb is one of the most demanding military mountaineering skills. Its success depends on skilled climbers who properly prepare their route and their equipment, and who execute the climb with close attention to each move.

Lieutenant Colonel William M. Menning commands the 3d Battalion, 172d Infantry (Mountain), Vermont Army National Guard. A 1971 ROTC graduate of Bowdoin College, he has also served with the 82d Airborne Division and the 10th Special Forces.

Lieutenant Colonel Stephen R. Sands formerly commanded the 3d Battalion, 172d Infantry and is now commandant of the Army National Guard Mountain Warfare School. He was commissioned through the Vermont Military Academy (Officer Candidate School) in 1971.

Profile Physical Training

CAPTAIN GEOFFREY N. BLAKE

Physical training in an infantry unit is a daily routine that normally emphasizes aerobic conditioning (distance running, interval training, aerobics) and anaerobic exercises (pushups, situps, weight lifting, and the like). In other words, these programs are usually planned specifically for soldiers who are physically fit. Unfortunately, there is no program for those soldiers who have limiting medical profiles and cannot participate in either aerobic or anaerobic exercises.

Whether a soldier has a temporary or a permanent limiting medical profile, his unit is responsible for seeing that he maintains a level of physical fitness that will enable him to perform his full duties, or those duties he can perform, if his unit should be deployed. More important, the prescribed physical fitness program should assist in his rehabilitation. This is a challenge for the master fitness trainer and for the company commander.

A physical training program of this kind should be designed to produce and sustain an acceptable level of fitness for a soldier who has a limiting medical profile. The specific training objectives

should focus on the development of alternative events that will exercise the parts of the body that are not injured and sustain their strength and endurance.

The master fitness trainer, along with the unit physician's assistant, should

current level of fitness and the alternative events that can be conducted for the particular limiting medical profile in accordance with Field Manual 21-20, Chapter 6, Figure 11-6. For example, alternative aerobic events that work well are swimming and stationary bicycling. Anaerobic events should be chosen carefully and monitored closely. The medical officer who grants a limiting medical profile should be precise as to what anaerobic events a soldier can and cannot do.

A soldier who is coming off a limiting profile still needs time to work on his body parts that have not been exercised for a while. He should be worked back into the regular physical training routine as quickly as possible, but he should also be given an opportunity to recover completely from his injury during special physical training periods.

For such a program to work, physical fitness training must be conducted in accordance with the field manual. Leaders must ensure that their subordinate leaders give all soldiers positive counseling to establish their fitness goals, performance objectives, and techniques for sustaining or improving



consider each soldier in terms of his profile. Once they have reviewed and verified a soldier's medical profile, they must design an individual workout program on the basis of the soldier's

their individual fitness levels.

In addition, before conducting any physical fitness activities, leaders must make sure appropriate safety precautions have been taken to prevent further injury to soldiers who have limiting medical profiles. The master fitness trainer should be appointed to supervise the program to ensure that these soldiers do not violate their profiles and that the commander's physical training

objectives are met.

Profile physical training should be aggressive; it should not lead soldiers to think that a medical profile is a way out of PT. Soldiers on such profiles, while resting injured muscles or joints, should still be able to increase their cardiovascular endurance and strengthen their uninjured muscles. This type of program not only provides goals for individual soldiers who have profiles but

also allows a company commander to continue training to meet his unit's physical fitness goals.

Captain Geoffrey N. Blake is a platoon observer-controller at the Joint Readiness Training Center. He previously served in the 9th Infantry Division and the 82d Airborne Division. He is a 1983 ROTC graduate of Cameron University.

Task Force Logistics

CAPTAIN JOHN L. TOMPKINS

As a new battalion task force S-4, either Infantry or Armor, you will find supporting and sustaining a combined arms task force (TF) in a field environment a real challenge. It will also be a challenge for the new battalion task force executive officers (XOs) and support platoon leaders you may be working with.

I would like to share some lessons that I learned while serving as an assistant brigade S-4 and as a battalion task force S-4. These lessons, however, are as much a result of evaluations of my trains by other battalion S-4s as they are of my own experience. In addition, NCOs in the unit's low-density MOSs were often able to give me good nuts-and-bolts answers to questions about areas that are foreign to most infantry officers — particularly when they arrive in the logistics world fresh from line companies or S-3 shops.

My intent is to provide you with a consolidated source of ideas for tactical level sustainment that is oriented toward the support of a combined arms task force in a field environment. This is by no means an all-inclusive list of *dos* and *don'ts*. It is intended to present ideas that will point you in the right direction and also give infantry and armor

logistics professionals some ways of getting things done for cross-attached companies of the opposite branch.

First, I assume you have a firm grasp of what logistics people are supposed to do and how they operate at the various organizational levels from company through division. If you don't, dig out FM 100-5 and read Chapter 4; then go to the support operations office at your forward support battalion (FSB) to read and discuss their SOP and their relationship with the main support battalion (MSB). You will need all of this information if you want to plan your support operations realistically. In short, be sure you know where your supplies come from and how long it takes to fill requests before you set any suspenses or make any promises.

The task force I served in consisted of two M113-equipped mechanized infantry companies, two M60A3-equipped armor companies, one M901-equipped antitank company, and a standard J-Series headquarters and headquarters company. This task force was permanently cross-attached for garrison and field operations.

The following is a list of things S-4s should consider (by class of supply), along with some common problems and

proposed solutions:

Class I. The most important thing to consider in this area is the number of people assigned to different types of companies — specifically, armor platoons have 16 soldiers, infantry platoons have 35 when they are at full strength. These numbers are most important to your mess NCO when you have to give him a breakdown of LRP (logistic release point) information. The biggest problem in this area is last-minute cross-attachments that may leave an infantry company with 20 extra meals or an armor company with 20 hungry infantry soldiers.

The solution is simple. First, it is unrealistic to expect the S-3 to be able to give you a firm task organization by the time your mess team needs them to make company breaks. Things change too often. Always use platoon breakdowns. This system takes more equipment and may require larger KP details, but it allows company breakdowns to be adjusted right up to the LRP by having first sergeants trade a couple of mermite cans. This flexibility is invaluable and well worth the extra work in the field trains.

(You can solve the equipment problem by requiring the attached units to

provide their own mermmites and utensils, but be sure your mess NCO is ready to sign for this equipment.)

Class II. If you are an Armor officer, keep in mind the increased demand for TA-50 that infantrymen have in the field. You must be familiar with the way the FSB conducts direct exchanges (DXs) and what is going to be stocked in the brigade support area (BSA). Some essential items are overboots, canteens, and sleeping bags.

Even though company supply NCOs conduct these transactions, company commanders will ask you about them (usually when the operations order is issued and in front of everyone else). Additionally, storms, fires, or accidents can make Class II resupply an emergency and you will have to react quickly. The DX van is the only tool you have to work with in such a situation, so plan ahead; know where it is and who owns it.

If you are an Infantry officer working with M1 tank units (and soon this will mean everyone), find out about their policy on wearing their NOMEX suits and what the companies stock for replacements. Because of the dollars involved, this may be an issue that is bigger than you are, but bring it up so everyone knows the situation up front.

Class III. Class III bulk items present the same problem as Class I, but in reverse. Here, armor needs more than infantry. If you're an infantryman, do not send a tank and pump unit (TPU) to an armor company. It will fill only three or four tanks, if you're lucky. A tank company needs at least one full HEMTT (heavy extended mobility tactical truck) per LRP, often more, particularly for M1 units.

The answer to this problem is simple. Make sure the tank companies you receive come with supporting fuel HEMTTs. Some armor battalions will tell you their HEMTTs belong to the HHC (headquarters and headquarters company), not to the line companies, but don't accept that answer. Insist upon these assets. Common sense dictates that they belong to the supporting unit.

In addition to having the necessary

equipment, you must also plan additional refueling operations for the companies and your support platoon. Plan these before and after all road marches, and always have two HEMTTs forward at the combat trains or the unit maintenance collection point (UMCP) for emergencies.

Class III package items must also be considered. Know the different products and amounts used by the tanks and the infantry vehicles. Get copies of company basic loads before deployment, and be sure these get to your support platoon's POL NCO in time to order the necessary items, or get the items from the units you are supporting. Since the amounts for tanks are also greater, make sure you can transport and store them.

Funds may come up again here. M1 tanks use some expensive package products, so infantry battalions must know early who will buy what.

Class IV. If you are an Armor officer, become familiar with the additional lumber and wire that infantry companies need, and get copies of their basic loads early. Then find out what each company carries on its tracks. This will give you a good idea of what they will ask for. Finally, make sure you know who will transport these basic loads to and from off-post training areas and what the local yard can provide.

An additional planning consideration is that if a battalion has infantrymen for work details it can plan more battalion level obstacles. This translates into more cargo-haul support and more materiel for the engineers, so be ready. All of this also means that more time and haul assets can be dedicated to obstacle recovery. Additionally, materiel handling equipment (MHE) becomes essential for quick recovery, so have both the assets and a plan.

Class V. If you are an infantryman, remember the increased haul required for moving tank ammunition for a live firing exercise. It is also important to support loading and unloading points with some kind of MHE.

If you are a tanker, find out your division ammunition officer's policy on turning in small arms brass. This policy dictates what brass your companies

must turn in. And remember that infantry units recover most of their brass off the ground, not from inside a turret, so plan your turn-in time accordingly.

In the matter of training ammunition, it is important for you to order more Hoffman devices for the tanks and to know that the .50 caliber ammunition used by the M2 Bradley crews won't work in the .50 caliber machineguns mounted on tanks, and vice versa. This ammunition difference is usually best solved by simply color coding the ammunition crates.

Class VII. Most end items in infantry and armor battalions are the same, with combat vehicles being the obvious difference. The main considerations for Class VII resupply are the sets, kits, and outfits associated with the vehicles. Communications equipment, in particular, is significantly different. But if your division uses the WSRO (whole system replacement operations) system, this may not present a big problem. If not, you should review TOEs, property books, and hand receipts, and then coordinate with your FSB on the way you will support any attached units. Also be sure your Class VII reports include *all* equipment, and see that they are well understood at all levels.

A final consideration for Class VII is to coordinate with the proper parties to have the necessary operators and crews on hand to receive vehicles when they arrive at your supporting Class VII yard.

Class VIII. Infantry units need more Class VIII supplies — a lot more. Pay particular attention to hot and cold weather supplies and foot powder. The medical platoons should trade supply lists and aid bag contents.

Class IX. Your battalion maintenance officer (BMO) will conduct and manage Class IX operations, but you should make sure your FSB knows how you are organized. This will enable the FSB people to reorganize the parts bins or break-out instructions, which means you won't have to re-sort parts when they arrive at the BSA. Keep in mind, too, that tank parts are generally bigger and heavier, and that it is important to have MHEs at the loading and



unloading points.

Maintenance Operations. Here again, your BMO is responsible for these operations, but you must make sure the FSB has organized the maintenance support teams (MSTs) to fit the task organization. Also, make sure the S-1 is aware of the new MOSs that show up in the cross-attached company maintenance teams.

Another S-4 responsibility is to make certain all recovery, diagnostic equipment, and PLL assets have been cross-attached at both company and battalion levels. Be sure to advise your battalion XO of any problems. Don't forget to tell the HHC commander and the maintenance section of their support requirements.

Unit Movement. The overall planning of deployments for off-post training is similar for armor and infantry units. Understand the different tie-down requirements, though, if you are using railroad trains that do not have integrated chains. Be sure to have the right spanners in adequate numbers at the railhead.

The final detail is having enough Class III bulk supplies at the train's destination to top off all the vehicles as they are unloaded. Remember how much fuel M60 and M1 tanks hold. If you have not previously rail-loaded a unit in the continental United States, you need to know that vehicles cannot go on the trains topped off. Thus, their fuel tanks cannot be more than one-half to three-fourths full.

Although most deployment planning is the same for both infantry and armor units, there can be wide variations from place to place in the details of loading and preparation requirements. If you have not planned a move at this level, or at your present duty station, get your brigade, division, and installation transportation office SOPs early, and don't be afraid to ask those people for help.

Budget. If you plan a permanent cross-attachment, first make sure your Division Tactical Unit Financial Management Office reorganizes your battalion/task force printout so the new organization prints as a unit. Companies should come with their current budgets intact, and future fiscal year breakdowns from brigade should reflect more money for armor companies even if they are in an infantry task force.

Finally, be aware of the extra money needed by the infantry battalion's HHC to support the higher cost of POL package products and the larger amounts of Class IX to support the additional fuel, cargo, and recovery vehicles the support platoon and battalion maintenance platoon may pick up. An armor battalion, on the other hand, can expect to spend a little extra on Class IV for its infantry companies.

Again, this advice is not an attempt to spell out general organization requirements. I assume you know those things, and each division is slightly different anyway. What I have tried to do is to bring to light certain specific

issues that can disrupt day-to-day logistical operations, and to offer some possible solutions to those issues if they should arise.

I also want to mention some things that can help avoid problems before an actual cross-attachment of units takes place. First, make sure the letter of agreement between battalion commanders specifically addresses budget matters and exactly what equipment and maintenance personnel will be cross-attached at battalion level. This is important whether your battalion will be task organized permanently or for field exercises only. Permanent cross-attachment is by far the better choice, if all the lieutenant colonels and colonels involved agree to it.

At battalion staff level, start talking with your counterpart early. The support for your new units is new only to you; to their S-4, it is old hat. Also, you will find it useful to work out standard logistical and personnel reports for both battalions.

Know the basics; use the information presented here. You will then be better prepared to support any task force organization if and when the time comes.

Captain John L. Tompkins served as S-4 of the 1st Battalion, 8th Infantry, and as an assistant brigade S-4 in the 4th Infantry Division. He is a 1985 ROTC graduate of Indiana University at Bloomington. He recently completed the Armor Officer Advanced Course and is now serving as the S-3 plans officer, 1st Brigade, 24th Infantry Division.

ENLISTED CAREER NOTES



ARMY CAREER AND ALUMNI PROGRAM (ACAP)

The Army Career and Alumni Program (ACAP) can help soldiers ease the transition from the Army to civilian life.

When soldiers are referred to ACAP, post Transition Assistance Offices (TAO) design individual transition plans to meet their needs. From financial counseling to job search skills, the office coordinates the services available both on and off post.

In addition to this office, Job Assistance Centers help soldiers write resumes, sharpen interviewing skills, and prepare for the job search. These centers have computerized databases of employers who are interested in hiring soldiers in transition.

To be sure his soldiers get full benefit from ACAP, a leader should refer them to the assistance office as soon as he knows of their plans to leave the Army. The more time they have to prepare, the easier it will be for them to find jobs or to prepare and submit college applications.

For more information about ACAP, call your local Training Assistance Office or call PERSCOM at DSN 221-2030 or commercial (703) 325-2030.

CTT TO MEASURE LEADERSHIP

Beginning 1 October 1991, noncommissioned officers who take the Common Task Test (CTT) also will be evaluated on their leadership abilities.

Soldiers in the rank of private through staff sergeant will be tested on 12 common soldier tasks. Sergeants and staff sergeants will perform two additional NCO tasks geared toward their levels of responsibility. Sergeants first class will be tested on six additional tasks.

This change was made in response to a 1989 report by the NCO Leader Development Task Force, which recommended that CTT be made more progressive and that it test each soldier at his level of responsibility. The task force was formed in October 1988 to investigate ways of improving the NCO ranks.

The common tasks for the revised test are in the Soldiers Manual of Common Tasks, Skill Level 1, dated October 1990, and Skill Levels 2 through 4, dated January 1989.

MASTER FITNESS COURSE OPEN TO AGR SOLDIERS

Active Guard/Reserve (AGR) soldiers are eligible to enroll in either the four-week Active Army component (AC) Master Fitness Trainer (MFT) Course or the accelerated two-week reserve component (RC) course. AGR soldiers are encouraged to attend the four-week AC course, if possible.

The MFT Course, by providing professional development for AGR soldiers, will ultimately improve the quality of the AGR program and the state of fitness among drill reservists.

Physical fitness is a continuing process. Individually prescribed exercise programs for drilling reserve soldiers are crucial to developing and maintaining their readiness because of the infrequency of their scheduled unit training. In addition, the MFT course is battle focused with respect to physical fitness.

A graduate of the course can develop a unit physical fitness training program that is specific to the unit's mission. Another function of the MFT is to serve as the subject matter expert to the unit commander on all doctrinal physical fitness issues.

The following are the prerequisites for the course:

- Recommendation of battalion commander or equivalent.

- All students must pass the Army Physical Fitness Test (APFT) on the first day of class.

- Students over 40 years of age must be medically cleared to take the APFT.

- Students must weigh in the first day of class and must meet the height and weight standards of AR 600-9.

- A GT score of 105 is recommended.

- Non-tobacco-users are recommended.

The MFT course is academically demanding. An intensive block of instruction includes such classes as skeletal and muscular anatomy and physiology, exercise physiology, and the cardiovascular system. Students must therefore have good reading comprehension to succeed in the course.

Applications for either course must be submitted through the appropriate chain of command to the Director, Full-Time Support Management Center (FTSMC), ATTN: DARP-AR, 9700 Page Blvd., St. Louis, MO 63132-5200, for quota allocations.

Anyone who would like additional information may call CPT Kiermaier at DSN 693-9571 or commercial (314) 263-9571.

RC NCOs NEEDED FOR NCOLP

The Army Reserve is encouraging senior NCOs who have multifunctional knowledge in logistics to apply for membership and training in the Non-commissioned Officer Logistics Program (NCOLP).

The Office of the Chief Army Reserve (OCAR) is recruiting high quality NCOs in the ranks of staff sergeant (promotable) through sergeant major in a designated NCOLP specialty. To qualify, an NCO needs five years of

logistics experience in his primary specialty.

Applicants must have outstanding military records with no court-martial or civil convictions, except minor traffic offenses. A security clearance of Secret

or higher is required, or a statement from a security manager indicating that a clearance application is being processed.

The list of designated NCOLP MOSs has been updated and is available from

MSG Larry Weese at HQDA, OCAR, ATTN: DAAR-LO, 1815 North Fort Myer Drive, Arlington, VA 22209-1805; telephone DSN 226-0274 or commercial (703) 696-0274.

SWAP SHOP



MONTHLY COUNSELING TECHNIQUE

In our unit, we use a standardized form for conducting monthly performance counseling. It is an effective method that covers all aspects of our soldiers' duty performance and covers many areas in specific detail. It is made up of two standard letter-size sheets.

Throughout the form, the counselor must place an X where applicable and fill in the blanks with bullet-type comments. The format serves many purposes:

- It is standardized for a particular unit.
- It is specific and requires a counselor to cite examples.
- It helps junior leaders become competent counselors.

• It ensures that all unit counselors are covering similar topics in accordance with the guidance of their leaders or commanders.

• It can be used without DA Form 4856 but for performance counseling only; DA Form 4856, General Counseling Form, must be used for initial, informal, and special counseling.

• It reinforces the unit chain of command.

• It helps leaders identify their soldier strengths, weaknesses, and particular training needs — fire team, squad, or platoon.

This format is only an example, but our unit has used it for the past two years and has found it effective. Other units can use it as a starting point and adapt it to their own needs.

MONTHLY COUNSELING SHEET				
Name		Rank		Month of:
Training Activities Participated in This Month:				
Special Activities:				
Evaluation of Professionalism and Performance				
Excellence	Success	Needs Improvement		
		Some	Much	
				Demonstrates initiative
				Adapts to changes
				Seeks self-improvement
				Performs under pressure
				Displays sound judgment
				Communicates effectively
				Demonstrates technical knowledge
				Individual integrity
				Demonstrates pride in unit
				Loyalty to unit & C of C
				Displays moral courage
				Self discipline
				Military discipline
				Honest in word and deed
				Team player
Bullet Comments:				
Duty Performance:				
* MOS Competency				
* Job Competency				
* Attitude toward Training				
* Weapons Qualification				
Excellence	Success	Needs Improvement		
		Some	Much	
Promotable Status: Individual is in Zone of Consideration Yes/No				
Recommend for Promotion / Not Recommended yet				
Physical Fitness:				
* Maintains Fitness				
* Participates in Unit PT				
* Maintains Height/Weight				
* Attitude toward Training				
* Understands Principles of Exercise				
Excellence	Success	Needs Improvement		
		Some	Much	

Personal Conduct:		
* Wear and Appearance While in Military Uniform		
* Maintains Haircut Standards		
* Displays Enthusiasm		
* Obeys Automobile Laws		
* Maintains Personal Finances		
* Limits Substance Abuse		
* Off-Duty Conduct		
Excellence	Success	Needs Improvement
		Some
		Much
Maintenance and Accountability:		
* Maintains Weapons and Equipment		
* Accountable for Weapons/Equipment		
* Room and Personal Property Standards		
* Participates in Unit Maintenance		
* Positive Attitude toward Maintenance		
Excellence	Success	Needs Improvement
		Some
		Much
Leadership Potential:		
* Take Charge of Details		
* March and Drill Soldiers		
* Leads PT		
* Presents Instruction		
* Lead a Patrol in the Field		
* Takes Initiative in the Absence of Orders		
* Cooperates When Others Lead		
Excellence	Success	Needs Improvement
		Some
		Much
Name, Grade, Signature of Counselor		Date
I acknowledge having been counseled by the above individual and understand the reason for this counseling. I concur/nonconcur that the information above accurately reflects this counseling session. I nonconcur for the following reasons:		
Name, Grade, Signature of Individual Counseled		Date

(Submitted by LT Mark D. Butler, XO, Company C, 1st Battalion, 14th Infantry, 25th Infantry Division, and SFC Richard A. Beal, formerly Scout Platoon Sergeant of the same battalion.)

OFFICERS CAREER NOTES



CLARIFICATION OF BRANCH QUALIFICATION

"Branch qualification" is a term that is familiar to all in the Infantry community, but there still seems to be some misunderstanding as to its meaning.

Branch qualification is defined as the successful completion of company command, an officer advanced course, and at least 12 months of duty in a troop unit as a company grade officer. Branch qualification occurs only once, and that is at the rank of captain.

Officers who are branch qualified and who have demonstrated a strong overall manner of performance in many challenging positions in our infantry organizations — whether at corps, division, regiment, brigade, or battalion level — will always be the most competitive for promotion to the next higher grade.

The term itself — branch qualification — does not apply to field grade officers. At the field grade level, an officer's performance throughout his service is the focus for promotion, command, or school selection. Contrary to popular belief, there is no specific position that a major, for example, must have served in before he is considered eligible for promotion to lieutenant colonel.

USMA SOCIAL SCIENCES GRADUATE PROGRAM

The Department of Social Sciences at the United States Military Academy at West Point is looking for highly qualified company grade officers who were commissioned through ROTC or OCS in Basic Year Groups 1984 to 1991 and who are interested in civilian graduate study, followed by a teaching assignment at the academy.

The Department of Social Sciences educates cadets in the academic disciplines of Political Science (both American and International), Economics, and Management. The department's selection process is exceptionally competitive and requires early application — it is never too early to begin the application process. Under consideration now are the applications of officers who may be available to start graduate study in the summer of 1993 or later. Applications for officers in the 1992 group must be complete, including reported GRE or GMAT scores, not later than 1 March 1992.

To compete, an officer must be branch qualified by the time he intends to begin graduate school, must demonstrate strong long-term military potential, and must have an undergraduate record that indicates he can gain admission to, and successfully complete, graduate study at a top U.S. university.

For more information, anyone who is interested may write to Department of Social Sciences, United States Military Academy, ATTN: MAJ Joseph Nunez, West Point, NY 10996.

SENIOR OFFICER LOGISTICS MANAGEMENT COURSE

The Senior Officer Logistics Management Course is specifically designed to update commanders and their primary staff officers at battalion and brigade level on logistics matters.

The course encompasses maintenance, supply, and transportation procedures, and offers hands-on experience with vehicles, weapons, and ammunition, and with medical, communications, NBC, and quartermaster equipment. It is open to officers in the rank of major and above in the Active Army, Army Reserve, Army National Guard, U.S.

SOLMC SCHEDULE FY 1992

CLASS NUMBER	CLASS DATES
1	6 Oct - 11 Oct 91
2	5 Jan - 10 Jan 92
3	26 Jan - 31 Jan 92
4	1 Mar - 6 Mar 92
5	29 Mar - 3 Apr 92
6	5 Apr - 10 Apr 92
7	26 Apr - 1 May 92
8	10 May - 15 May 92
9	14 Jun - 19 Jun 92
10	20 Sep - 25 Sep 92

Marine Corps, and allied nations, and to Department of Defense civilian employees in the grade of GS-11 or above.

The one-week course is conducted ten times each fiscal year at Fort Knox, Kentucky. (See accompanying schedule for FY 1992.) Class quotas may be obtained through normal TRADOC (Training and Doctrine Command) channels.

Further information is available from CPT Hammerle, DSN 464-7133/3411 or commercial (502) 624-7133/3411.

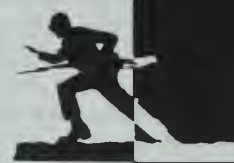
CAS3 SCHEDULE — FY 1992

The following is the schedule of Combined Arms and Services Staff School (CAS3) classes for FY 1992:

CLASS NUMBER	CLASS DATES
1/2-92	16 Oct - 19 Dec 91
3-92	5 Jan - 6 Mar 92
4-92	12 Jan - 13 Mar 92
5-92	10 Mar - 12 May 92
6-92	18 Mar - 20 May 92
7-92	17 May - 17 Jul 92
8-92	1 Jun - 31 Jul 92
9/10-92	10 Aug - 9 Oct 92



BOOK REVIEWS



Numerous publishing houses have been most kind in sending along copies of their latest DESERT SHIELD/DESERT STORM publications for review. For example, from the Osprey Publishing Company in England we have the first three volumes in its series titled DESERT STORM Specials. They are LAND POWER: THE COALITION AND IRAQI ARMIES, by Tim Ripley (1991. 64 Pages, Softbound); AIR POWER: THE COALITION AND IRAQI AIR FORCES, by Roy Braybrook (1991, 64 Pages, Softbound); and SEA POWER: THE COALITION AND IRAQI NAVIES, by Peter Gilchrist (1991, 64 Pages, Softbound).

Each one has an authoritative text supplemented by numerous and previously unpublished photographs, plus maps, charts, and other graphics. The sea power volume is arranged differently from the other two, in that it lists by country the various combatant vessels each participant furnished or, in the case of Iraq, the vessels it had on hand in August 1990.

Then we have a most attractive and well-done publication from the Turner Publishing Company. It is titled CNN: WAR IN THE GULF, by Thomas B. Allen, F. Clifton Berry, Jr., and Norman Polmar (1991. 240 Pages. \$19.95, Softbound). The authors have prepared a solid narrative, and the publisher has nicely complemented it with a wide variety of photographs (most in full color), maps, and other graphic devices. The result is an attractive, readable, nicely designed large-format publication.

Following three introductory chapters that set the stage, the authors discuss the U.S. decision for war (after an "erratic march to war"), the build-up of U.S. and coalition forces ("the oldest U.S. military force to be sent into the field since the Civil War"), the air and naval campaigns, the Iraqi reaction, and the final preparations for and conduct of the ground war. The authors conclude their narratives with the events immediately following the cease-fire agreement — up to 28 April 1991 — and offer their thoughts on what the future holds for Iraq.

As might be expected, the authors make a spirited defense of CNN's coverage of the war and base it largely on the grounds that since both sides were censoring the news,

CNN's reports, particularly those from Baghdad, could easily be equated with those "from 'military-escorted' news pools in Saudi Arabia." Thus, the war with Iraq may (or may not) be over, but the "war" between the military services and the news media continues, without a real cease-fire agreement in sight.

A book similar to CNN's in some respects but different in many others is DESERT STORM: THE WAR IN THE PERSIAN GULF, by the Editors of TIME Magazine. Edited by Otto Friedrich (A TIME Book, distributed by Little, Brown. 1991. 232 Pages. \$19.95). It contains more maps (a separate one that has been used by TIME before), charts, and other graphics. The writers do cover the military actions but seem more interested in other events.

Although they address the problems encountered by the news media and their personnel and activities, they prefer the offense to the defense and mount a strong attack on the military services' news policies as implemented in the Persian Gulf regions. (They certainly do not want to believe that U.S. public opinion was so overwhelmingly against them.)

All in all, the writers apparently intend to convince their readers that there was indeed a gigantic protest movement against the war in the U.S., and that the U.S. was responsible for encouraging Iraq to invade Kuwait. As a result, the U.S. is also responsible for the destruction of Kuwait, the damage to the world's environment caused by the oil well fires and the oil spill in the Gulf, and the deaths of untold numbers of civilians.

Here are several other publications you should find of interest:

- **WEAPONS OF DESERT STORM.** Introduction and Consultation by Walter J. Byrne (Publications International, Limited, 7373 N. Cicero Avenue, Lincolnwood, IL 60646. 1991. 96 Pages. \$7.95, Softbound).

- **H. NORMAN SCHWARZKOPF: ROAD TO TRIUMPH,** by M.E. Morris. A St. Martin's Paperback (St. Martin's, 1991. 287 Pages. \$4.99, Softbound). This is really more the author's view of the war rather than a strict biographical account. Several

minor errors to look out for: McCaffrey was the commander of the U.S. 24th Infantry Division, not McGaffrey; he was a major general, not a lieutenant general; and LRS units are not part of the Special Forces.

- **THE GENERALS: THE NEW AMERICAN HEROES,** by Bill Adler (Avon Books, 1991. 215 Pages. \$4.50, Softbound). Grit your teeth when you read this one, for the author seems to know next to nothing about military force structure and organization.

- **GULF WAR: A COMPREHENSIVE GUIDE TO PEOPLE, PLACES, AND WEAPONS,** by Walter J. Byrne (Publications International, 1991. 224 Pages. \$4.95, Softbound). Similar to this same publisher's book mentioned three titles above, but includes a brief country-by-country survey.

Operation JUST CAUSE continues to receive its share of attention from the publishing houses. Two of the most recent titles we have seen are PANAMA: THE WHOLE STORY, by Kevin Buckley (Simon and Schuster, 1991. 304 Pages. \$21.95) and THE ENEMY WITHIN: CASTING OUT PANAMA'S DEMON. Text by Kenneth Jones. Picture Editor, Roberta G. Jones (Focus Publications, Panama, 1990. Available from JAM, P.O. Box 5371, Brownsville, TX 77523. 160 Pages. \$21.95).

Both are journalistic, not historical, accounts, the first told largely in words, the second in pictures. Kevin Buckley's is not the "whole" story, because there are too many missing pieces. But it does offer a detailed explanation of certain events that occurred in Panama between September 1985 and December 1989 involving mainly Panamanian citizens that eventually led to the U.S. military operation and the overthrow of General Manuel Antonio Noriega. He uses secondary sources for the most part and an apparent large number of "confidential sources." He is not kind to the U.S. military services, particularly General Maxwell Thurman, or the U.S. Department of State. Unfortunately, he does not tie the events together and they seem to have affected only a handful of the people. He does not go beyond the events to show how the bulk of the people of Panama reacted to them.

The second book covers much the same ground, but uses a sparse narrative and a

large number of four-color photographs and succinct captions (not all correct) to tell the overall story. Although there are numerous typographical and grammatical errors, the photographs make this a worthwhile book for anyone interested in Panama and in Operation JUST CAUSE.

And because we like maps, we believe you will find these to be most interesting and useful:

- **U.S. MILITARY INSTALLATION ROAD MAP**, 1991 Edition (Military Living Publications, P.O. Box 2347, Falls Church, VA 22042-0347. \$5.95 for a single, folded map, \$15.00 for two wall maps unfolded in a hard tube). Shows the location of military installations and recreation areas all across the country. It also identifies the major support facilities at each installation and offers other useful information.

- **ATLAS OF EASTERN EUROPE**, AUGUST 1990. U.S. Central Intelligence Agency (USGPO S/N 041-015-00170-1. 39 Pages. \$16.00, Softbound). Brings together, through maps and charts, a variety of geographical, political, historical, and economic information to profile the region and its constituent states. Some of the maps have been adjusted to reflect East Germany's transitional status.

Finally, airborne enthusiasts should want to become familiar with **THE PARACHUTE PAGES**. Compiled and Edited by Kathryn G. Omelchuck (Skydiving Book Service, P.O. Box 1520, DeLand, FL 32721. 176 Pages. \$19.95, Softbound). This publication contains more than 2,900 entries, including manufacturers, suppliers, dealers, lofts, associations, publications, consultants, and parachute drop zones. Information for more than 70 countries is included and the book is extensively cross-referenced.

Now here are our longer reviews:

- **THE CRUCIBLE OF WAR, VOLUME I: WESTERN DESERT, 1941**. By **Barrie Pitt**. Originally published in England in 1980. (Paragon House, 1989. A Giniger Book. 506 Pages. \$24.95).

- **THE CRUCIBLE OF WAR, VOLUME II: YEAR OF ALAMEIN, 1942**. By **Barrie Pitt**. Originally published in England in 1982. (Paragon House, 1990. A Giniger Book. 478 Pages. \$24.95). Both books reviewed by Major Harold E. Raugh, Jr., United States Army.

The first publication in the United States of these two books is to be applauded. Both volumes distill numerous lessons from desert warfare that British forces fighting in that environment learned the hard way during World War II.

The first volume chronicles in rich detail the often-neglected campaigns of General Wavell in Egypt as well as in Italian East Africa, Iraq, and Syria. It also includes his replacement by General Auchinleck in July 1941 and the latter's Operation CRUSADER.

The second volume begins with the post-CRUSADER period and tells of the battles of Alam Halfa and 1st Alamein. It includes the arrival of Generals Alexander and Montgomery, who defeated General Rommel at 2d Alamein, a battle that sounded the death knell for the Axis forces in North Africa.

Impeccably researched, vividly written, lavishly illustrated, these two volumes lay out in great detail the British campaigns conducted by Wavell, Auchinleck, and Alexander in North Africa. They make a welcome addition to any Infantryman's or military enthusiast's bookshelf.

BATTLE TACTICS OF THE CIVIL WAR. By **Paddy Griffith** (Yale University Press, 1989. 239 Pages. \$25.00). Reviewed by **Major Don Rightmyer**, United States Air Force.

Was the American Civil War the last of the Napoleonic conflicts, the first of the modern wars, or a transition between the two? That's just one of the numerous subjects the author, a well known British military historian, discusses in this book. He also provides an excellent treatment of a subject seldom discussed in our published Civil War studies — the tactical employment and use of ground forces on the battlefield.

In the span of eight chapters, the author gives us a tremendous amount of interesting research on and analysis of tactical command and control, drill, the battlefield and fortifications, artillery, cavalry, the infantry firefight and the primary weapon used by both sides — the rifle.

His is a highly readable narrative that offers numerous insights into the battle formations and tactics used by both armies. Although it is by no means the definitive work on Civil War tactics, it certainly provides a worthwhile and helpful discussion of how the Blue and the Gray went about fighting their war.

FIRE IN THE STREETS: THE BATTLE FOR HUE, TET 1968. By **Eric Hammel** (Contemporary Books, 1991. 371 Pages. \$24.95). Reviewed by **Doctor Joe P. Dunn**, Converse College.

Most of Eric Hammel's 14 previous

military history books focus on U.S. Marines in combat. He has also justly earned his reputation as the premier popular combat historian of the Vietnam War.

This hourly, day-by-day account follows the pattern he employed in his previous works — an extensive reliance on command chronologies and after action reports supplemented by extensive interviews with participants.

Written in a lively, readable style, it is the most complete and detailed account of this central action of the war. The reader easily becomes caught up in the emotion, drama, and personal sagas of the battle. It is highly recommended for those who are interested in such intimate battle accounts.

WAR IN KOREA, 1950-1953. By **D.M. Giangreco** (Presidio Press, 1990. 330 Pages. \$40.00). Reviewed by **Lieutenant Colonel Donald C. Snedeker**, United States Army.

This book, in reality a photographic history of the war, is definitely worth the asking price. Each of the more than 500 black-and-white photographs assembled by the author tells its own story. Taken together, they tell the whole story. Each U.S. military service, each branch, each ally, civilian and soldier alike, is represented. The pictures tell real stories of real people, with names and dates and places.

It is this aspect of the book that sets it apart from most of its contemporaries. The photo captions help a reader grasp the significance of what the photos depict — the fear, the cold, the grief, the shared emotions of men and women involved in man's most fearsome adventure — war.

THE LIMITS OF AIR POWER: THE AMERICAN BOMBING OF NORTH VIETNAM. By **Mark Clodfelter** (The Free Press, 1989. 297 Pages. \$22.95). Reviewed by **Lieutenant Colonel Jack Mudie**, United States Air Force Retired.

This book describes three bombing campaigns launched by the United States against North Vietnam — **ROLLING THUNDER**, the on-again, off-again (March 1965-October 1968) attempt using Air Force and Navy tactical aircraft to destroy North Vietnam's war-making capability and will to fight; **LINEBACKER I** (May-October 1972), which included the aerial mining of Haiphong harbor, to convince North Vietnam to begin serious negotiations to reach a peace accord; and **LINEBACKER II** (18-29 December 1972), the so-called B-52 Christmas bombing campaign against Hanoi-

Haiphong to stop, once and for all, North Vietnam's intransigence at the Paris peace talks. (The peace agreement was signed 25 days after LINEBACKER II's last mission.)

The author, a professor of history at the U.S. Air Force Academy when he wrote this book, faults Air Force leaders for believing that the destruction by air power of an aggressor nation's industrial capability would soon halt its aggression. They had failed to foresee its effect on determined North Vietnamese political leaders for whom the loss of electric lights and return to candles (or use of portable generators) was not that much of a regression or relative hardship.

The author says that air power can be effective in attaining a lasting military solution only when it is pursuing a clear political goal. This was not the case under President Lyndon Johnson; it was true under President Richard Nixon's administration.

This book should be read by civilian leaders and military professionals alike, because it contributes to a better understanding of the separate problems each group faces in pursuit of a common objective. Unfortunately, a mutually satisfactory overall objective was never clearly defined in Vietnam.

THE GREAT CRUSADE. By H.P. Willmott (The Free Press, 1989. 500 Pages. \$24.95). Reviewed by Lieutenant Colonel Cole C. Kingseed, United States Army.

In recent years there has been a massive outpouring of publications commemorating the 50th anniversary of World War II. Unfortunately, most have espoused the conventional interpretation of the origins and conduct of the war and have varied little from those of the first postwar generation of historians in 1945.

In this book, the author's fresh reappraisal of the war will greatly interest all students of this century's major conflict. By focusing on the relationship between power and military force, he examines political and economic factors, as well as military capabilities, in his analysis of the conduct of the war.

What makes his reappraisal so interesting is his willingness to question the traditional schools of historical interpretation. He rejects the "great man" approach to history because he believes total war is waged by states, societies, and systems, not individuals. Consequently, he views the struggle in the North African desert not as a Montgomery-Rommel clash but rather as a conflict

decided by the overwhelming military and economic strength of the Western allies.

Willmott also refutes what he terms the "pernicious myth" of German military excellence. He feels that German military genius lay in fighting, not waging war, and posits that the Axis lost the industrial and economic struggle as early as 1943.

Interestingly, Willmott argues that none of the combatants gained the objectives it held when it entered the war. Even the United States was forced to decide how to use its postwar power: to preserve the status quo or change it.

In the final analysis, the author concludes that if one considers the alternative to Allied victory, perhaps the human cost of 57 million dead and the attendant massive destruction were, in the balance of history, a relatively small price to pay for ridding the world of depraved wickedness. That assessment alone makes this book mandatory reading for the present generation of students of World War II.

HEROES OF WORLD WAR II. By Edward F. Murphy (Presidio Press, 1990. 365 Pages. \$24.95). Reviewed by Major General Albert H. Smith, Jr., United States Army Retired.

This book is great reading for combat veterans of all of our military services, for the author describes how individual warriors influenced an action or saved the day in battle after battle in all theaters of World War II from Pearl Harbor to V-J Day.

Unlike official military compilations, the book devotes a page or two to biographical information for each Medal of Honor recipient whose story is highlighted. For example, the reader learns a lot about Captain Bobbie Brown — that he was age 37, that he had already served 22 years in the Army, that he was an expert marksman, and that he had been a star boxer and football player during his early enlistments — before reading any discussion of his Medal of Honor feat.

Then there is the story of Signalman 1st Class Douglas A. Monroe, the only U.S. Coast Guardsman to earn the Medal during World War II. In charge of nine small boats, Monroe somehow managed to evacuate 500 wounded Marines from a fire-swept Pacific invasion beach. Tragically, he was killed by bullets from a Japanese machinegun during the final minutes of his valiant endeavor.

Ed Murphy is a master storyteller, and he makes these and many other battle accounts come alive for history buffs of all ages. His book is also a fine reference

volume, because it contains a comprehensive index that lists each Medal of Honor recipient: 294 Army and Army Air Corps, 57 Navy, 81 Marine, and 1 Coast Guard. The 24 pages of photographs and a well-organized index are also definite pluses. It is a recommended addition to a military professional's personal library.

THE NAPOLEONIC SOURCEBOOK. By Philip Haythornthwaite (Facts on File, 1990. 414 Pages). Reviewed by Colonel John S. Spence III, United States Army Reserve.

The author, a leading British expert on the Napoleonic period, has compiled an impressive work of encyclopedic proportions. This single volume is conveniently divided by subject matter: the campaigns, the weapons and practice of war, the involved nations, and the key military leaders.

The book is concisely, yet nicely written, and its organization makes it easy for a reader to get the important facts and figures the author offers. The various major battles of the Napoleonic era are set forth in detail to reflect the art of war as it was in the early 19th Century. There is also an excellent table that includes information on all of the major battles.

The military professional can learn important lessons from this book. All readers are bound to be impressed by the sheer volume of factual material the author presents, as well as by the original paintings of the period and the detailed drawings of a number of the battles.

BRITISH INTELLIGENCE IN THE SECOND WORLD WAR: VOLUME 5, STRATEGIC DECEPTION. By Michael Howard (Cambridge University Press, 1990. 271 Pages. \$34.50). Reviewed by Captain Richard P. Ugino, United States Army National Guard.

This, the fifth volume of the official history of British intelligence activities during World War II, centers on the efforts of the British first, then the Allied contributions in the matter of strategic deception, culminating in the deception operations used during the preparations for the D-Day landings in France in June 1944.

Although the author uses recently declassified information in writing his study, much of what the book contains can be found in other, more entertaining books on the same topic.

While the British are to be commended for leading the way in developing intelligence

that went hand-in-hand with security, the author seems to suffer from selective memory-loss when he examines their overall efforts. Conspicuously absent, for example, is any mention of the SOE and its operations.

Much of the book's premise depends on a reader's knowledge of the overall intelligence operations conducted by all sides, and the book is difficult to follow without this knowledge. Thus, this is a book far better read by the military intelligence historian than by the general reader.

RECENT AND RECOMMENDED

GERONIMO!: AMERICAN PARATROOPERS IN WORLD WAR II. By William B. Breuer. St. Martin's Press, 1989. 621 Pages. \$29.95.

A BRIGHT SHINING LIE. By Neil Sheehan. A Vintage Book. Random House, 1989. 861 Pages. \$12.95, Softbound.

THE FIRST SALUTE: A VIEW OF THE AMERICAN REVOLUTION. By Barbara W. Tuchman. Ballantine Books, 1989. 347 Pages. \$11.95, Softbound.

PRESIDENT EISENHOWER AND STRATEGY MANAGEMENT: A STUDY IN DEFENSE POLITICS. By Douglas Kinnard. A Pergamon-Brassey's Classic. An AUSA Institute of Land Warfare Book. Pergamon-Brassey's, 1989. Originally published in 1977. 169 Pages. \$16.91.

LINEBACKER: THE UNTOLD STORY OF THE AIR RAIDS OVER NORTH VIETNAM. By Karl J. Eschmann. Ballantine Books, 1989. 273 Pages. \$4.95, Softbound.

EYE-DEEP IN HELL: TRENCH WARFARE IN WORLD WAR I. By John Ellis. Originally published in hardcover in 1977. The Johns Hopkins University Press, 1989. 215 Pages. \$12.95, Softbound.

VIETNAM NOW: A CASE FOR NORMALIZING RELATIONS WITH HANOI. By John LeBoutillier. Praeger, 1989. 144 Pages. \$18.95.

ARMS CONTROL AND EUROPEAN SECURITY. Edited by Graeme P. Auton. Praeger, 1989. 205 Pages. \$39.95.

CONFLICT RESOLUTION: THE ANALYTIC HIERARCHY APPROACH. By Thomas L. Saaty and Joyce M. Alexander. Praeger, 1989. 252 Pages. \$49.95.

THE FOUR DEUCES: A KOREAN WAR STORY. By C.S. Crawford. Presidio, 1989. 288 Pages. \$18.95.

TECHNOLOGY AND WAR: FROM 2000 B.C. TO THE PRESENT. By Martin van Creveld. The Free Press, 1988. 342 Pages. \$22.95.

BILL MAULDIN'S ARMY. A Reprint of a Reprint. Third Printing, 1984. Presidio, 1984. 384 Pages. \$14.95, Softbound.

FIFTH ARMY AT THE WINTER LINE, 15 NOVEMBER 1943-15 JANUARY 1944. First printed by the Historical Division, War Department, for the American Forces in Action series, 1945. USGPO S/N 008-029-00198-5. CMH Pub 100-9. Center of Military History, 1990. 117 Pages. \$4.95, Softbound.

SALERNO: AMERICAN OPERATIONS FROM THE BEACHES TO THE VOLTURNO, 9 SEPTEMBER-6 OCTOBER 1943. First printed by the Historical Division, War Department, for the American Forces in Action series, 1944. USGPO S/N 008-029-00196-9. CMH Pub 100-7. Center of Military History, 1990. 95 Pages. \$4.00, Softbound.

TO BIZERTE WITH THE II CORPS, 23 APRIL-13 MAY 1943. First printed by the Historical Division, War Department, for the American Forces in Action series, 1943. USGPO S/N 008-029-00207-8. CMH Pub 100-6. Center of Military History, 1990. 80 Pages. \$4.75, Softbound.

THE CAPTURE OF MAKIN, 20-24 NOVEMBER 1943. First printed by the Historical Division, War Department, for the American Forces in Action series, 1946. USGPO S/N 008-029-00206-0. CMH Pub 100-2. Center of Military

History, 1990. 136 Pages. \$5.50, Softbound.

FROM THE VOLTURNO TO THE WINTER LINE, 6 OCTOBER-15 NOVEMBER 1943. First printed by the Historical Division, War Department, for the American Forces in Action series, 1945. USGPO S/N 008-029-00197-7. CMH Pub 100-8. Center of Military History, 1990. 119 Pages. \$4.75, Softbound.

PAPUAN CAMPAIGN: THE BUNASANANANDA OPERATION, 16 NOVEMBER 1942-23 JANUARY 1943. First printed by the Historical Division, War Department, for the American Forces in Action series, 1945. USGPO S/N 008-029-00205-1. CMH Pub 100-1. Center of Military History, 1990. 107 Pages. \$4.50, Softbound.

POLITICS AND GOVERNMENT IN THE MIDDLE EAST AND NORTH AFRICA. By Tareq Y. Ismael and Jacqueline S. Ismael. Florida International University Press, 1991. 570 Pages. \$39.95.

FLAGS OF THE NAPOLEONIC WARS (1). Text by Terence Wise, color plates by Guido Rosignoli. Originally printed in 1978. Men-at-Arms Series 77. Osprey, 1991. 40 Pages. Softbound.

FLAGS OF THE NAPOLEONIC WARS (2). Text by Terence Wise, color plates by Guido Rosignoli. Originally printed in 1978. Men-at-Arms Series 78. Osprey, 1991. 40 Pages. Softbound.

FLAGS OF THE NAPOLEONIC WARS (3). Text by Terence Wise, color plates by Guido Rosignoli. Originally printed in 1981. Men-at-Arms Series 115. Osprey, 1991. 40 Pages. Softbound.

THE FRENCH NAVY IN INDOCHINA: RIVERINE AND COASTAL FORCES, 1945-54. By Charles W. Koburger, Jr. Praeger, 1991. 160 Pages. \$39.95.

POLAND AND THE BALTIC REPUBLICS. By Ronald L. Tarnstrom. A Volume in the 50 Centuries of Warfare Series. Trogen Books (Route 1, Box 4, Lindsborg, KS 67456), 1990. 175 Pages. \$19.95.



I AM THE INFANTRY

EDITOR'S NOTE: The epic poem "I Am the Infantry" first appeared in the July 1956 issue of the *Infantry School Quarterly*, the forerunner of *INFANTRY*, pages 56-57. Since then it has been modified several times and is used in numerous ways at the Infantry Center and

School. It is printed on graduation programs, for example, and a dramatic taped version with life-sized figures of infantrymen over the years is presented. Here is the latest official version of the poem.

I am the Infantry — Queen of Battle! For two centuries I have kept our Nation safe, purchasing freedom with my blood. To tyrants, I am the day of reckoning; to the suppressed, the hope for the future. Where the fighting is thick, there am I ... I am the Infantry! FOLLOW ME!

I was there from the beginning, meeting the enemy face to face, will to will. My bleeding feet stained the snow at Valley Forge; my frozen hands pulled Washington across the Delaware. At Yorktown, the sunlight glinted from the sword and I, begrimed and battered, saw a Nation born.

Hardship and glory I have known. At New Orleans, I fought beyond the hostile hour, showed the fury of my long rifle ... and came of age. I am the Infantry!

Westward I pushed with wagon trains ... moved an empire across the plains ... extended freedom's borders and tamed the wild frontier. I am the Infantry! FOLLOW ME!

I was with Scott at Vera Cruz ... hunted the guerrilla in the mountain passes ... and scaled the high plateau. The fighting was done when I ended my march many miles from the old Alamo.

From Bull Run to Appomattox, I fought and bled. Both Blue and Grey were my colors then. Two masters I served and united them strong ... proved that this nation could right a wrong ... and long endure. I am the Infantry! FOLLOW ME!

I led the charge up San Juan Hill ... scaled the walls of old Tientsin ... and stalked the Moro in the steaming jungle still ... always the vanguard. I am the Infantry!

At Chateau-Thierry, first over the top, then I stood like a rock on the Marne. It was I who cracked the Hindenburg Line ... in the Argonne, I broke the Kaiser's spine ... and didn't come back till it was "over, over there." I am the Infantry! FOLLOW ME!

A generation older at Bataan, I briefly bowed, but then I vowed to return. Assaulted the African shore ... learned my lesson the hard way in the desert sands ... pressed my buttons into the beach at Anzio ... and bounced into Rome

with determination and resolve. I am the Infantry!

The English Channel, stout beach defenses, and the hedgerows could not hold me ... I broke out at Saint-Lo, unbent the Bulge ... vaulted the Rhine ... and swarmed the Heartland. Hitler's dream and the Third Reich were dead.

In the Pacific, from island to island, I hopped ... hit the beaches and chopped through swamp and jungle ... I set the Rising Sun. I am the Infantry!

In Korea, I gathered my strength around Pusan ... swept across the frozen Han ... outflanked the Reds at Inchon ... and marched to the Yalu. FOLLOW ME!

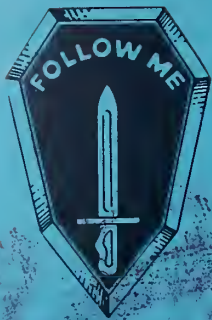
In Vietnam, while others turned aside, I fought the longest fight; from the Central Highlands to the South China Sea I patrolled the jungle, the paddies, and the sky in the bitter test that belonged to the Infantry. FOLLOW ME!

Around the world, I stand ... ever forward. Over Lebanon's sands, my rifle steady aimed ... and calm returned. At Berlin's gates, I scorned the Wall of Shame. I spanned the Caribbean in freedom's cause, answered humanity's call. I trod the streets of Santo Domingo to protect the innocent. In Grenada, I jumped at Salinas and proclaimed freedom for all. My arms set a Panamanian dictator to flight and once more raised democracy's flag. In the Persian Gulf, I drew the line in the desert, called a tyrant's bluff and restored right and freedom in 100 slashing hours. Duty called, I answered. I am the Infantry! FOLLOW ME!

My bayonet ... on the wings of power ... keeps the peace worldwide. And despots, falsely garbed in freedom's mantle, falter ... hide. My ally in the paddies and the forest ... I teach, I aid, I lead. FOLLOW ME!

Where brave men fight ... there fight I. In freedom's cause ... I live, I die. From Concord Bridge to Heartbreak Ridge, from the Arctic to the Mekong to the Caribbean to the desert ... the Queen of Battle!

Always ready ... then, now and forever. I am the Infantry! FOLLOW ME!



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